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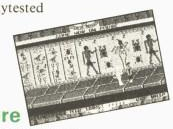

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Editorial

THE RECENTLY-ANNOUNCED character licensing deals involving Superman, the Disney favourites, and the Muppets should give the software industry a much-needed shot in the arm next Christmas. Although the only companies to benefit directly will be those with the financial clout to arrange such deals, the vitality of the market should be boosted if the games are of the quality we've been promised.

Last Christmas micro-based companies were disappointed by sales, having expected a tremendous response — but what did they really have to offer? Next Christmas, we can look forward to bigger, better machines and bigger, better software. Already, the forward-looking magazines, software houses and hardware distributors are planning for a revival in the flagging industry. We're doing our bit with our October computer show — of which, more on the news page — and let's hope that everyone else involved in the industry will encourage the production of imaginative, affordable software, quality machines and original ideas in the next few months.

Next Month

Graphics extra
Hardware and software roundup

Seiko terminal
Computer power on your wrist

Plus
Great contests, features and news

EDITOR Christopher Jenkins **PRODUCTION EDITOR** Barbora Hajek **EDITORIAL SECRETARY** Geraldine Smyth **GROUP ADVERTISEMENT MANAGER** David Lake **ADVERTISEMENT MANAGER** Simon Langston **ADVERTISEMENT EXECUTIVE** Simon LaFosse **MANAGING EDITOR** Brendon Gore **PUBLISHING DIRECTOR** Duncan Scot **TELEPHONE (ALL DEPTS)** 01-437 4343 **UK ADDRESS** Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP **US ADDRESS** Commodore Horizons, c/o Business Press Int'l, 205 East 42nd Street, New York, NY 10017 **SUBSCRIPTIONS** UK £10.00 for 12 issues, overseas surface (excluding US and Canada) £16.00 for 12 issues, US and Canada airlifted US$33.95 for 12 issues.

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ABC

SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

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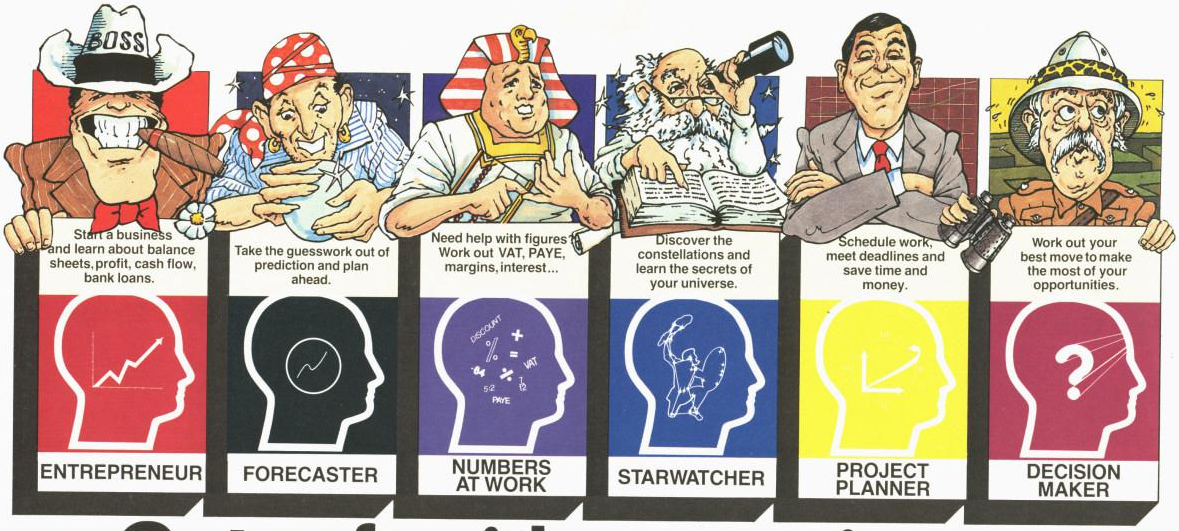
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The manual has a simplicity that is endearing – Commodore Horizons.

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Adventure plea

I REGULARLY subscribe to two magazines, yours and P.C.W., not just because I'm a fan of Geraldine Smyth but because I find them both balanced, informative and wide ranging. However, P.C.W. has one advantage, it has an adventure helpline. Such a service offered in C.H. would be of great vlaue as it not only helps adventurers on their travels but puts us CBM users in touch with each other. So how about it? Here's one to start with: **Perseus & Andromeda,** CBM 64: I've got helmet, discus, winged shoes, shield, how do I fly?

P Dent
Seaham
Co. Durham

STAR LETTER

The C16 expanded

I AM VERY interested in writing computer games. I own a C16 but I am very dissappointed about it's memory and graphics. I find the graphics unrecognisable — they just seem like a blur to me. Plase could you tell me if I can get an expansion pack for the C16?

If not then I am thinking of buying a different computer; please could you also give me adice as to which one I should buy, noting what the graphics and memory are like.

Mark Shattock
Bristol

MCT of Group House, Fisher's Lane, Norwich (0603-666966) and Stonechip of Unit 9, Brook Trading Estate, Deadbrook Lane, Aldershot (0252-333361), both make expansion packs for the C16. The machine's graphics are as good as anything on the market — a good programming book would help you to make the best of them.

Praise for A&C

AS A RESULT of an advert in your magazine I purchased a "Datafile" from A & C Software. To meet my own special requirements, modifications have been made on four different occasions, with new disks being sent through the post by return.

I cannot speak too highly of the way in which my requirements have been dealt with, and the patience and courtesy received. For the modest purchase I have made from this firm I have received outstanding service.

B F Thrope
Chaddesden
Derby

A reader restored

TODAY I collected the June edition of "Commodore Horizons" from my local papershop. I would like to say that I think your magazine is great and that I have been taking your magazine for the past 18 months. However I was a little disappointed when I turned to page 8 and saw a photograph of Ariolasoft's Frank Brunger, who I met earlier this year.

The picture you published of Frank Brunger was half of the photograph I had taken with him when I won a Commodore SX-64 earlier this year. You must have cut the photograph in two — am I lying on the editing room floor, or worse in the bin?

However jokingly on the cover of your magazine it says "Commodore Horizons has it all!" — maybe not this month for me.

However, thanks for a great magazine.

P.S. I sulked for nearly a whole minute then carried on reading your great magazine.

Paul Clift
Sharpness
Glos.

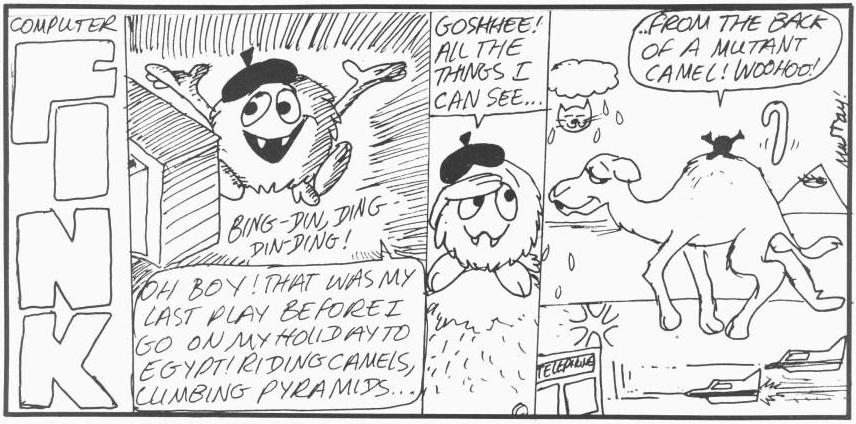
SORRY FOR giving you the chop Paul — in fact you were tucked away in our filing cabinet along with Frank!

Helpful hints

HERE ARE some helpful POKEs and a SYS code that might prove useful to Commodore 64 owners:
POKE 650,128: key repeat.
POKE 775,200: disable list.
POKE 775,165: enable list.
SYS 64738: resets computer, same as switching off/on.

Also, if when loading you get:
BREAK
READY
(no cursor)
then try this:
POKE 808,150
RUN

Robert Epps
Croydon
Surrey


COMPUTER
FINK
BING-DIN, DING-DIN-DING!
OH BOY! THAT WAS MY LAST PLAY BEFORE I GO ON MY HOLIDAY TO EGYPT! RIDING CAMELS, CLIMBING PYRAMIDS...
GOSHHEE! ALL THE THINGS I CAN SEE...
...FROM THE BACK OF A MUTANT CAMEL! WOOHOO!
TELEPHONE

Cartoon heroics

SUPERMAN, hero of comics and films, will soon be making an appearance on the Commodore 64 — and Walt Disney's characters Mickey Mouse, Donald Duck and Pluto won't be far behind.

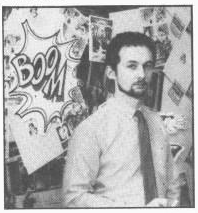
Superman will appear on the Monolith/Timeless label, by arrangement with US software house First Star. Monolith/Timeless is a new venture from EMAP, owners of Beyond Software. First Star's **Spy Vs Spy** is already available on Beyond, and Monolith will be fronted by Beyond's Clive Bailey and Bill Delaney.

The Superman game, which may feature other DC Comics characters such as Superdog and Supergirl, will be produced by a system known as "authoring", which allows graphic designers to create unusually detailed graphics. While final arrangements for Superman are being made, Monolith's first releases will be **Rockford's Riot** (a sequel to **Boulderdash**) and **Quake Minus One**, an arcade adventure by Mike Singleton, author of the Lords of Midnight series.

Meanwhile, US Gold and Ocean have signed a deal with Walt Disney Productions to create new games based on forthcoming Disney films, undertake the licence for US software featuring Disney characters, and take the licence for all remaining Disney characters.

Forthcoming Disney films include **Return to Oz**, the follow-up to the classic film **Wizard of Oz**, and **The Black Cauldron**. US Gold also has the rights to produce software based on **The Jungle Book**.

The first three US titles which US Gold will distribute are **Mickey's Space Adventure, Winnie the Pooh In Hundred Acre Wood** and **Donald Duck's Playground**. The products, marketed in the US by Sierra On-Line, are educational adventure games aimed at the younger market, and will retail in the UK for £12.95 on disk, with cassette versions to follow.



US Gold's new KIDS! label will also be used to launch two programs based on The Muppets. **kermit's Electronic Story Maker** and **The Great Gonzo** are licensed from Simon and Schuster, and both are word games for younger users.

Mastertronic munchies

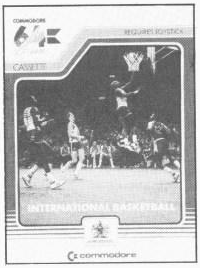
AN UNUSUAL marketing tie-up between a software house and a snack food manufacturer has resulted in a new CBM 64 game.

Clumsy Colin by Mastertronic is based on a well-established KP Skips cartoon character. Colin has appeared in comics, on posters and in TV advertising. Twelve million packs of Skips will carry publicity for the game, and KP will be running an on-pack promotion offering a free model Clumsy Colin Action Bike. Mastertronic's Martin Alper commented "Working with KP has given us access to the big multiples, and having the game publicised on the packs will help promote the Mastertronic game to potential purchasers."

The game will sell for £1.99, and will be available through the usual Mastertronic outlets including confectioners, tobacconists and newsagents as well as specialist software outlets.

Basketball bounces back

COMMODORE'S long-overdue **International Basketball** is now in the shops. The game, by Andrew Spencer, is a sequel to his highly praised **International Soccer**. This time though the program is on tape.



Like International Soccer, Basketball is presented in 3-D perspective, with animated sprite graphics. There are three players on each team, and a wide range of options including one or two players, team colours, difficulty levels and game rules, either Olympic, NBA or NCAA.

Players are joystick controlled, and change colour to indicate which one is in possession. They can dribble, shoot and run, and leap to intercept stray passes. We'll be reviewing the game, which costs £5.99, in the next issue. Contact Commodore on 0536-205555.

Fairies dance

ORPHEUS Software has now released Elidon for the 64. The game, which features a fairy heroine searching for seven magic flowers, was written by John Marshall. Elidon includes the music "Anitra's Dance" by Greig, and includes keyboard and joystick options. Talk to the fairies on 0767-51481.

Horizons on show

COMMODORE'S Sixth Computer Show at the London Novotel on June 7th, 8th and 9th has been advertised as the "official launch" of the C128, although the machine will not be in the shops before August. Plans for the show include a press briefing to demonstrate the 128 and the Unix-operating 900, along with a public showing of the 128, new games software, and a number of celebrity appearances and contests. We'll be bringing you a full show report in the next issue.

Meanwhile plans are going ahead for the Commodore Horizons Show in October. At the same venue, the Hammersmith Novotel, the Commodore Horizons Show will be held on the Saturday 5th and Sunday 6th of October, and will cater for users of the 64, Vic 20, C16, Plus/4, 128, and the business machines. The show will feature exhibitions from major software houses, as well as hardware manufacturers, dealers and user groups.

Potential exhibitors should contact Tim Collins of Computer Marketplace on 01-930 1612. There'll be more details forthcoming in future issues of Commodore Horizons.

Creative sparklers

ANOTHER mega-corporation is going into the budget software market. Following hot on the heels of British Telecom's Firebird, Thorn-EMI's Sparklers range is now in the shops.

The publishers of successes like Macbeth and Danger Mouse will be offering a range of games at £2.50, including titles for the Vic and 64.

Taskmaster for the 64 is a seven-screen animated adventure, in which a heroic prince must fight off zombies, vampires, barbarians, demon worshippers and other deadly menaces to win the hand of a beautiful princess. **Chopper**, again for the 64, pits you against enemy fighters, bombers, balloons and helicopters in your bid to destroy a heavily defended enemy base.

Fourth Encounter, for the Vic with 8K expansion, is a four-screen Invaders-type game in which you must destroy progressively more hostile waves of attackers. Forthcoming titles for the 64 include **Merlin** and **Kayak**, and there may be more Vic titles later on. Talk to Thorn-EMI on 0252-543333.

Commodore appoints marketing chief

PAUL WELCH, Commodore UK Sales Manager for the last three years, has been promoted to the newly created position of UK Manager, Marketing and Consumer Sales.

Welch's responsibilities will cover hardware and software on both the home and business fronts.

The appointment is part of a drive for "far closer co-ordination of Commodore's marketing and sales activity" in the words of new General Manager Nick Bessey. "Already an experienced senior manager with widespread contacts throughout the trade, Paul Welch is the ideal choice to bring about the level of sales and marketing synergy required."

As part of the reorganisation several other new appointments have been made, including a national accounts controller, software accounts manager and national accounts manager. There have also been more departures — following in the wake of Marketing Manager David Gerrard, the latest Commodore employee to leave is Rae Potter, formerly Software Products Marketing manager. A Commodore spokesman commented "I believe he's gone to another software company — but there was, as they say, no acrimony involved in his departure."

Automatic Arabic

JCL SOFTWARE has produced two new products for Arabic users of the 64 and 128. The ZAN 64 cartridge converts the 64 into a full Arabic / English bilingual system. Basic programs can be entered in either language, and converted at the touch of a key. Provision has been made for printout in either language, and the two languages can be combined in one program if required.

JCL's other product is an Arabic wordprocessor, which features full context analysis, automatically displaying the correct shape for each character when it occurs at the start or end of a word, as well as controlling the cursor in right-to-left mode. Output is possible via a CBM 1101 or MPS 801/2 printer, although Epson types are also supported.

C128 versions are under development, and a bilingual database system is on the way too.

For details of price and availability, contact JCL Software at 1 Sheffield Road, Southborough, Tunbridge Wells, Kent, 0892-27454.

Racing cockroach

THE BIZARRELY-NAMED Cockroach Software has come up with a utility designed to improve the insect-like speed of the 1541 disk drive.

Turbo 64 was developed in Australia, and allows you to produce versions of your disk software with fast-loading built in. Claimed speed improvements can be up to a factor of five, with Easy Script for instant loading in ten seconds, and the package comes with a number of labels which allow you to identify your Turbo-treated disks.

Each Turbo disk can store several programs, and on loading you are presented with a menu from which you select the program you wish to load.

The program works by modifying the Commodore DOS, and by removing the "double-checking" feature in the load routine — so your disk drive has to be in good condition.

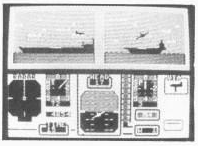
For more details contact Cockroach Software, 20 The Crescent, Machen, Newport, Gwent NP1 8ND, 0633-440434.

Anirog takes off

ANIROG'S latest game is **Jump Jet**, which will be available in versions for the 64, expanded Vic and C16.

Jump Jet is a complex Harrier flight simulator incorporating a number of options including hovering and landing practice, radar and range-finder interception and air-to-air combat with enemy aircraft.

Author Vaughan Dow, a Harrier pilot himself, is the author of Flight Path 737 for Anirog, and spend a year developing Jump Jet. The 64 version of the game will cost £9.95, and the disk version £11.95. The game incorporates software speech created using Anirog's Voice Master hardware.



More details on the Vic and C16 versions will be released soon. For more details contact Anirog, Unit 10, Victoria Industrial Park, Victoria Road, Dartford, Kent, 0322-92513.

Tymac connects up CBM

TYMAC UK, producer of the "Talkies" software series, is now moving into the hardware market. The US parent company, Tymac Controls Corporation, has produced an intelligent printer interface for the 64, Vic 20, C16 and Plus/4. The Connection is a parallel device which plugs into the serial socket, and translates Commodore ASCII information into conventional form.

For more details contact Tymac UK, Unit 78 Standard Way, Gravelly Industrial Park, Tyburn Road, Birmingham, 021-327 6637.

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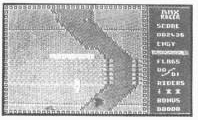
BMX-cellent

Mastertronic's contribution to the C16 software market is a conversion of one of their earliest and most popular games. Despite its simplicity it's still selling well in its other versions, and at the usual £1.99 is extraordinary value for money.

There are five colourful BMX courses, seen from above, through which you have to steer your bike. There are hazardous obstacles to avoid including crash barriers, oil slicks and fences, and you must pick up marker flags as the track scrolls past. Missing any of the flags means that you'll crash at the end of the course.

Just to make life more difficult there's an energy readout at the top of the screen, and if you run out of energy before completing the course you'll crash again. Energy pods along the way



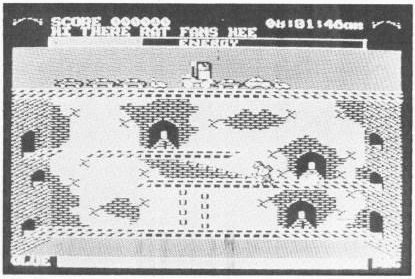
offer the chance to top up on "fuel", so if you can't manage higher speeds you still have a chance to get through if you're skilful enough. Keyboard or joystick control and an awesome bit of insert artwork complete this fun package from the undisputed kings of the software supermarket.

Program: BMX Racers, C16
Supplier: Mastertronic
Price: £1.99
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★

Superstar

Nyeeahh! Here it is ratfans — Roland's Rat Race, featuring the megastar rodent himself, plus of course furry friends Erroll the hamster and Dave the aardvark, or whatever they're called.

This is unexpectedly good, largely due to a wonderful sense of humour rather than any originality in the game. Roland has to get to the TV studios before 9am, travelling through the sewers and tunnels beneath London. Roland's armed with a glue gun which makes the most disgustingly realistic squirping noise, and is



his only protection against hordes of baddies including vicious yellow wellingtons and sluggoids.

The maze of pipes and tunnels is represented with good detail and colour, and the little Roland is instantly recognisable. In the usual mould of arcade adventures, there are pieces of a key to find in order to open the escae door; and various tricks to learn like the method of catching the underground trolleycar (without getting squashed).

Remarkably good music and sound effects, and a fine game for the kiddies since nobody gets hurt (much). Good fun.

Program: Roland's Rat Race, 64
Supplier: Ocean
Price: £7.95
Graphics: ★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★

In the pits again

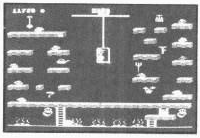
This is a follow-up to Miner 2049er, a big success in its day and one of the first ladders-and-platforms efforts to come from the States.

As usual, this US Gold version displays a great deal of programming skill, and is good fun to play, but in the case of this game there's not much in the way of originality on offer.

There are twenty-five screens to complete, each one of which contains a selection of blobby disgusting muties.

Each cavern contains a piece of equipment which can aid Bounty Bob in his quest — for instance, in the first a laser gun lets him squash the baddies when he picks it up, and a transporter helps him to get to the higher levels of the cavern. In the second a utility hoist allows him to roam around the cavern safely while planning strategy.

Other features include gravity lifts, pulverizers, suction tubes, cannon, acid rain and energy food bars. In other words, it's a cross



between Manic Miner, Pacman and Panic, though with good sounds and music. The sprites are nice, the joystick feature which enables you to control Bob's jumps is clever, and there's nice use of colour.

You can't blame US Gold for cashing in on the success of the American games, but I think they ought to be a bit more selective; can the world take another ladder, another platform, or another slimy mutant?

Program: Bounty Bob Strikes Back, 64
Supplier: US Gold
Price: £9.95
Graphics: ★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★

Cutesey

I thought that cutesy games were on the way out, but Gribbly's Day Out features not only a nauseatingly cute hero, Gribbly Grobbly — I ask you! Gribbly Grobbly! — but also a little booklet full of fascinating details on the lives of the Gribblets, Topsies and Stompers of the planet Blabgor.

In fact it's not as pukey as it sounds, since there's a really good game with some excellent

programming lurking under the sugar coating.

Gribbly is a bouncing monopod whose task is to herd the immature griblets into the safety of caves, protected from the Stompers, Topsies and the mad Seon. The joystick allows you to control Gribbly's flight around a mysterious landscape of flying islands and caverns. A net of Psi power must be avoided or deactivated for Gribbly to move around safely, and the little devil blows balloons at any alien life-form foolish enough to get in his way.

The little details, such as Gribbly's facial expression, the imaginative character set, and the unusual sound effects, combine to give Gribbly's Day Out a refreshing originality. More of the same, please, Hewson.

Program: Gribbly's Day Out, 64
Supplier: Hewson Consultants
Price: £7.95
Graphics: ★★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★

Hellicopter

Another cheap-and-marvellous effort from Mastertronic, this time a shoot-'em-up of frightening proportions.

Skyjet starts promisingly with a loading screen which qualifies as the best I've ever seen, showing the eponymous combat helicopter in flight. The game itself starts off slowly, but rapidly becomes a real joystick-twister if you play on the higher difficulty levels.

Your mission, should you choose to accept it, is to transport supplies from one side of the landscape (which is about five screens across) to

your base. To do this you must guide your chopper through hails of fire from enemy tanks and boats, while watching out for submarines you can depth-charge. On finding a supply pod you must land, pick it up and return, dropping it on the supply zone. This leads to your radar bases being assembled piece by piece, and once they're finished you move on to a more complicated screen with more enemies.

There are nine levels of difficulty, joystick or key options, good sound effects and excellent mushrooming explosions. Absolutely no subtlety whatsoever, I'm glad to say — a sort of Defender variant in which the tanks, boats, saucers and fighters come thick and fast, and you just have to shoot the hell out of them.

Nothing's been overlooked here — there's even a fast loader, a little luxury that you don't expect when you pay £1.99, and screen shots on the insert so you know exactly what you're getting. Snap it up.

Program: Skyjet, 64
Supplier: Mastertronic.
Price: £1.99
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★

Grandiose hotel

This follow-up-in-concept to the under-rated Zim Sala Bim is another "movie" arcade adventure. The characters are depicted in a window at the top of the screen, and the hero's movement is controlled by a joystick. Commands of the usual kind — get, drop, use, inventory, look, and so on — are entered with the keyboard, and the computer responds appropriately.

The hero is an intrepid spy who must recover stolen documents from the Grand Hotel before escaping by helicopter at midnight. The graphics aren't as three-dimensional as Melbourne House makes out — not compared with Ultimate's Commodore games, for instance — but they are quite colourful and clear. The program recognises only 24 verbs, so there's a good deal of "You can't do that" floating around. Still, the format of the game is promising and I'd be surprised if it didn't become more popular as time goes on,

since it combines the puzzle elements of adventures with the movement of arcade games. It's a pity that the program isn't written with more verve — the room descriptions are very simple, and apart from the excellent music (sounds like Keith Emerson attempting "Peter Gunn" after a night on the tiles) there are a lot of ways in which Grand Larceny could have been made altogether more grand.

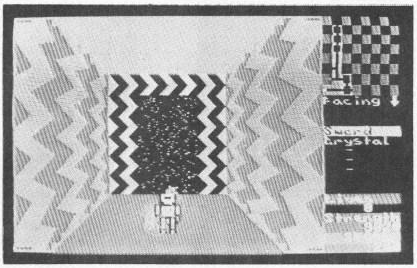
Program: Grand Larceny, 64
Supplier: Melbourne House
Price: £7.95
Graphics: ★★★★★★
Sonics: ★★★★★★★
Gameplay: ★★★★★★★

Heavy, man

Gates of Dawn is far out — an arcade adventure set in the lands of dream, featuring a bold traveller facing the perils of the subconscious.

Each of the 64 screens is a room, and the route you follow is shown on a chessboard map. Your armoured knight must use his sword to fight off bats and demons, but can only flee from some of the terrors.

As with most text adventures, there are useful objects which can be picked up and added to your inventory,



then recalled and used at the appropriate time. There's also a life force indicator, current score readout, compass and command menu.

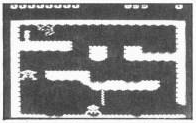
What's most interesting is the design of the rooms — not particularly high-resolution, but some quite weird Escher-like scenes which can leave you feeling quite peculiar.

A good effort, and a real sign, if more proof were needed, that Virgin has matured into one of the most interesting software houses relying on their own efforts rather than on bought-in imports.

Program: Gates of Dawn, 64
Supplier: Virgin
Price: £7.95
Graphics: ★★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★

Eight in one

Cave Fighter is a conventional ladders-platforms-meanies effort, in which there are eight levels with six caves in each. Each level is loaded into the computer after the last has been completed, so in effect you're getting eight Vic games for the price of one. It's certainly an ingenious solution to the problem of the unexpanded machine's limited memory.



As you leap under joystick control from platform to platform, the nasties wobble around giving off poisonous gases which you must avoid. You are armed with a laser gun, but this doesn't kill them, it just causes them to reappear in another part of the cavern. You automatically fire in the direction the joystick is pointing, and the height of your jumps is controlled by the length of time you keep the fire button pressed down.

Your only aim is to escape from the caverns before your energy runs out, so there's not much variety to it. But Cave Fighter should keep a few Vic owners satisfied, and reassure them that some software houses at least will respond to the demand for new games.

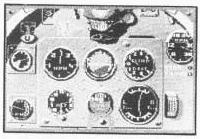
Program: Cave Fighter, Vic 20
Supplier: Bubble Bus
Price: £5.95
Graphics: ★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★

Scramble, scramble

Flight simulations are a popular field, and to make a success of any new effort requires some sort of originality. Mirrorsoft's idea is to use the famous wartime Spitfire fighter as the subject of the simulation.

The cockpit simulation is incredibly detailed, with the full range of controls, completely animated. The map screen is also good, and you use this to track down and intercept enemy fighters. Remember, no radar! The actual pilot's view is a disappointment, with jerky animation of the horizon and very poor detail on the enemy planes as they appear in your rear-view mirror or zoom towards you.

The actual combat sequences are quite good, with loops, rolls, splits and dives all possible. The sound of enemy shells thudding into your fuselage is quite un-nerving, and as usual the most nerve-



wracking bit is trying to land — inevitably you'll crash the first few times, putting an end to your glorious career as a fighter ace.

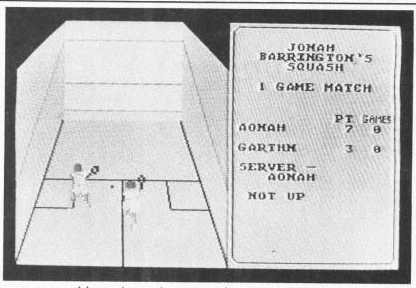
Full save options and a competition complete the package, which offers probably the best chance you'll get of becoming a Group Captain, VC, DSO, DFC, in the safety of your own living-room.

Program: Spitfire 40, 64
Supplier: Mirrorsoft
Price: £12.95 cass, £14.95 disk
Graphics: ★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★

Urggfff!

Apart from ferret-flinging I thought all the possible strenuous sports, from underwater hang-gliding to Rollerball, had been converted into computer games. Of course I'd forgotten the big grunter, Squash, but New Generation hadn't. This version is very good, with the two players (or one versus the computer) represented by International Soccer-like sprites zooming around a realistic squash court.

The program automatically selects forehand or backhand shots for you when hitting the ball, so all you have to worry about is the timing. The ball is



very smoothly animated and makes a pleasant CHUNK when it hits the wall, or a PING if it hits the "tin", signifying a foul shot.

For those of you unfamiliar with the game, the manual gives a good explanation of the intricacies of hitting balls against walls.

There's a selection of difficulty levels and user-definable keys, plus an excellent attempt at speech synthesis called ReproSound, which allow the famous Jonah Barrington to announce the scores. On the preview copy, the first time round the voice worked fine, but on subsequent games it had slowed to half speed, as if poor Jonah had ruptured himself, and came out more like "wuurrrnn lurrrfff" than "one love".

PS — someone should tell NewGen that "yellow" is spelt with two l's, not three. But who am I to carp at mere details. A goodie, and worth looking out for.

Program: Jonah Barrington's Squash, 64
Supplier: New Generation.
Price: £7.95
Graphics: ★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

ET go home

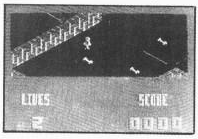
This one's an excellent idea, and could have been a great game if the graphics had been a little more distinguished.

Blagger, hero of Alligata's two notable games, is off to Hollywood to steal the only copy of Steven Spielbum's latest movie (you can estimate from this the level of humour involved).

The film studios are represented in a 3-D perspective view similar to that of *Ant Attack* or *Realm of Impossibility,* but with very little detail. As Blagger moves around the scrolling screeen, he has to avoid energy barriers and various film stars, while looking for the objects that will help him to defeat them.

There are 12 film sets to negotiate, before Blagger finds his way to the 13th room where the film is kept.

Blagger Goes To Hollywood



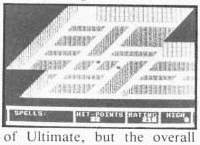
is OK but really no more — it's a good idea which hasn't been sufficiently thought through. Mind you, as a bonus the package includes an order form which enables you to send off for a free Blagger T-shirt and badge, so even if you aren't that taken with the game you'll have something for your money.

Program: Blagger Goes To Hollywood, 64
Supplier: Alligata
Price: £9.95
Graphics: ★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★

Aardvark

Once again we venture into the haunted realms of Tharg, searching for the sundered pieces of the sacred pentacle of Spoth, protected from the mutant Weeblies only by the enchanted Vestments of Grunge. Yes folks, it's arcade adventure time again.

Ariola's effort features small spindly figures rather than the large detailed efforts



of Ultimate, but the overall effect is to give a much better illusion of size to the 3-D perspective backgrounds.

There are 13 dungeons to get through, with 129 different rooms, and horrors as diverse as zombies, spiders, ghouls, and little round things.

Each dungeon presents a different challenge as you negotiate the mazes, towers, platforma and corridors, and the names are good fun in themselves — for instance The Ethereal Plane, The Pits of Gehenna, and The Stygian Crypts, which sounds like Sunshine Towers on a wet Wednesday.

Rather good fun to start with, but the excitement might not linger.

Program: Realms of Impossibility, 64
Supplier: Ariolasoft
Price: £9.95 cass, £14.95 disk
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★

ENTOMBED

Descend into the Stygian depths of the Egyptian catacombs in Ultimate's latest puzzler. ***Chris Whitcombe*** *acts as torch-bearer . . .*

Sir Arthur Pendragon (SAP to his friends) was one of these men who could never resist a good story and a bit of excitement; so when somebody told him about the legend of Osiris, he was unable to contain his exuberance and set off immediately to see what he could discover.

That's how he came to be in a chamber deep in the bowels of the earth. The walls were covered in hieroglyphics. He moved to take a closer look and see if he could make some sense of the ancient drawings. As he did so, the flagstones beneath his feet seemed to give a little and two huge statues slid across the only apparent exit, blocking it completely. He remembered something in the legend about letting the eye of Osiris guide your way. He searched the room and soon noticed something in the corner that looked hopeful. Sure enough, halfway up the wall was an eye. 'If this is a clue to the exit I'd better jump to it and find the answer before I use up all the air in here.'

For an experienced adventurer like Sir A., the secrets of the way out didn't stay secret for very long, and he soon had the statues sliding back to their previous positions either side of the now open archway. 'I'm glad to be out of there', he thought, little knowing what lay in stores for him just around the corner. He turned to throw a last glance at the room he had left. It wasn't there! 'Let's hope I don't need to go back that way' he mused.

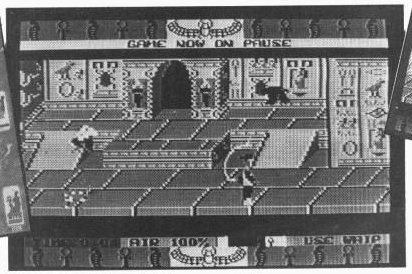
Our hero was unable to decide which way to go along the corridor. Both directions looked alike, just long passages lined by walls of very beautiful Egyptian hieroglyphs. 'There's only one way to make the right choice', he thought, 'do what I always do on these occasions... toss a coin'. He did so and set off in search of the way out. Sir Arthur was rather perturbed by the fact that he had nothing to ward off the multitude of scorpions, mosquitoes and Guardian Spirits that delighted in attacking him at every opportunity, and he hoped he would find something along the way that would help keep the beasties at bay.

A doorway appeared. He entered, and almost at once had to jump over a couple of boulders that came crashing down the stairs towards him. There was a chest at the back of the room alongside another eye symbol. 'I hope this is going to be worth all the trouble', he thought as he made a dash for the casket avoiding more rocks as he ran. 'Now that's more like it', he said to himself (there was no-one else to say it to!), removing the whip from it's hiding place, 'someone must have known I was coming'. He left the chamber as quickly as he could, glad that he had found a weapon in the use of which he was expert, but also feeling a little weak from the bites and stings of the creepy-crawlies that patrolled the corridors.

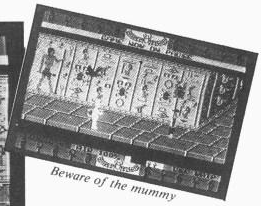
He came across a recess in the wall and went over to have a closer look. SAP had hoped that he might find a secret passage, but it was not to be. Just then, he noticed a large black bird flying along in his direction carrying something in one of its claws — a sacred Ankh talisman. As the bird passed by he leapt and made a grab for it. It disappeared! Strangely, he felt a new lease of life surge through his body, so he decided to continue on down the corridor in search of a way out.

After walking into a few dead-ends (more than a few actually) he came across another doorway. He went in. No boulders this time, only an obelisk, a statue and the most enormous beetle you could imagine guarding the exit on the far side of the chamber. It didn't look at all friendly but, on the other hand, at least it did not seem to want to chase our hero away. Sir Arthur studied the room carefully. There were the usual markings on all the walls and on the obelisk and there was a shelf high up on one wall that had something perched on it. He tried to dislodge whatever it was, but it stubbornly refused to leave its resting place.

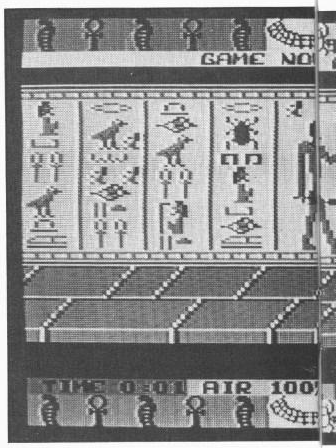
He leapt over the beetle, collecting only a small nip on the way, and found himself in a corridor (what else!) with the same beautifully painted designs on the walls,

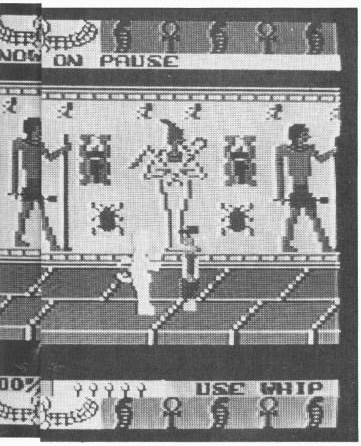


Use the magic whip against the creepy-crawlies

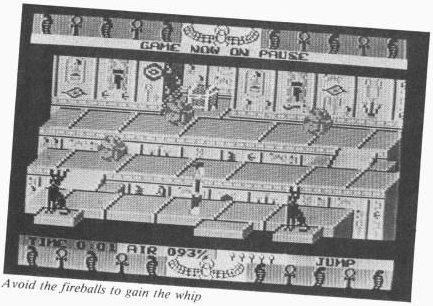


Beware of the mummy





GAME: Entombed
MICRO: CBM 64
PRICE: £9.95
SUPPLIER: Ultimate



Avoid the fireballs to gain the whip

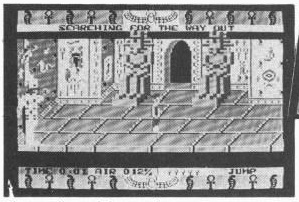
but this time in different colours. In situations such as these it's difficult to know which way to go so he left the decision, as usual, to the toss of a coin. SAP, as usual, set off in the opposite direction hoping that he had made the right choice. Another door; another room. He strolled towards the far side where he had noticed a familiar sight, but almost immediately found himself transported back to the doorway by a Guardian Spirit who seemed to appear from (and disappear into) one of the Sarcophagi. Fortunately, the mummy-like creature seemed none too bright and our hero, always one for being in the right place at the right time, was soon able to roam freely about without any more spiritual intervention. It didn't do him any good though, as he discovered nothing new which, quite frankly, surprised him not a little. He returned to the corridor feeling drained after his exertions and wishing that the creepy beasties would leave him along for a while... but they didn't. He pressed on, putting his best foot forward and was soon rewarded with another opening.

'Things can only get better', he thought, '...or worse', as he stepped inside to be confronted by the one thing he really hated... snakes. They weren't afriad of him or his whip though, and he soon felt their anger at his intrusion. Despite his fear, SAP rose to the occasion and made a dsah for the centre of the chamber where a small chest was resting under the watchful eye of the slithering guardians. Inside was a clue to the location of the magic torch, which didn't seem to make much sense at the time, but 'perhaps it will later', he thought.

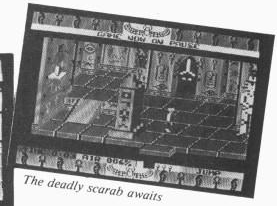
He began to get a picture of the layout of the labyrinths fixed in his mind and so was soon able to find the only passage that (he felt sure) he hadn't yet been along. He was right, and went forward to discover another chamber of statues, the same wall paintings and an exit on the far side. There was, of course, something blocking the way. In one corner of the room he eye cold see an object that required closer inspection. He was unable to make out what it was. He couldn't open it, although it seemed to have some sort of catch on it; nor could he move it, despite trying all kinds of trickery that he had learnt was often necessary in these circumstances. 'Perhaps I could play a tune on it', he muttered, remembering the riddle in the snake pit. He shuddered at the thought of having to go into the 'vipers den' again, but go there he must; and everywhere else that he had been for that matter. Sir Arthur felt sure that the way out was from this room, just as he was sure that, should he get out, there would be many more dangers in store for him before he finally saw the light of day once more. But he also knew that he has missed something along the way. The Guardian Spirits kept away from the alcoves... were they afraid of something? And what was that on the shelf?

If only the statues could talk! Our intrepid hero gritted his teeth, went back to square one and prepared to do battle, yet again, with all the nasties that had dogged his path right from the very start.

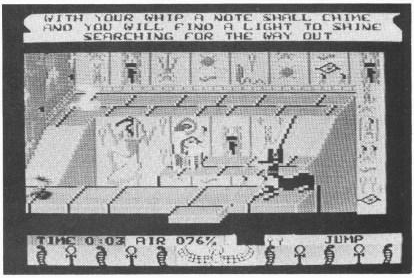
'Ah ha!', he exclaimed, 'now if I.....' ■



The guardians of the portal

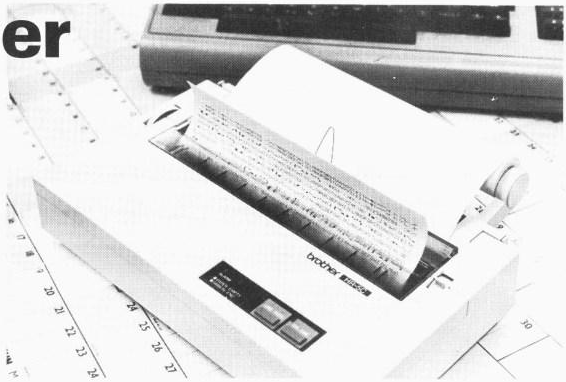


The deadly scarab awaits



Trapped in the snake pit with a cryptic clue to confuse you further

It's not heavy – it's a Brother



COMMODORE users are always finding that the choice of printers is difficult. The MPS-801 is slow, and short on facilities, and at £229 is too expensive for many owners. Most of the other Commodore printers are either more expensive, or offer fewer facilities.

One alternative is to go for a non-Commodore unit such as an Epson, Juk; or Star. The problem here is that the final print quality and the range of facilities provided — such as sheet feed, true descenders, bidirectional printing and so on — are excellent, but the cost of the interface and possible operating difficulties have to be taken into account.

The Brother HR-5C is an attempt to overcome some of these problems, and to offer an affordable printer system without complex extra hardware or software. The HR-5C is directly compatible with the 64, Vic 20, C16 and Plus/4, having the same serial socket as that found on the MPS-801, for instance. It prints on special thermal paper, or on ordinary paper if you insert a ribbon cartridge.

The unit weighs 1.6 kg, and the dimensions are 30x17x6 cms. This means that the HR-5C will sit easily on any decent surface, and takes up about half the space of a conventional printer. In operation the printer is almost silent.

Power is supplied by four batteries or a 6V power adaptor. The special thermal paper used by the printer is supplied on a roll, which fits onto two feed arms assembled to project from the back of the device. Connect up, switch on, and you're ready to go.

The manual is very much like that of the MPS-801. There are eight DIP switches which control the warning buzzer, line pitch and so on; and controls on the front for line feed and on-line/off-line selection. Everything else is software controlled, and is fully explained in the manual.

After a section on ASCII codes, the manual covers the use of files and peripheral controls. Secondary addresses are covered next, along with print and control modes which allow the use of reversed characters, double width characters and user defined characters. There are several useful example programs in the manual, and technical details on the interface connections and circuitry for those who are interested.

The head is nine-pin, printing in an 8 by 5 matrix. Maximum print width is 80 columns on the A4 width roll or sheet paper, and normal print speed is 30 cps.

On the whole the HR-5C is a neat, portable, efficient machine with a good deal to recommend it.

Thermal paper printout is obviously not as good as printout using a ribbon cartridge, and the cartridges can only be used once (printing about 10,000 words) and are fairly expensive to replace. Obviously the machine isn't suitable for heavy-duty business work, but for normal program listing or simple correspondence it's an attractive alternative to bulkier, more expensive devices. ■

Product: Brother HR-5C thermal transfer printer
Supplier: Jones & Brother, Shepley St, Guide Bridge, Audenshaw, Manchester, 061-330-6531
Price: £154 + VAT.

This is your chance to carry away a Commodore-compatible Brother HR5-C thermal printer

★ *Directly Commodore-compatible — no interface necessary*

★ *Prints on sheets or rolls, thermal or normal paper*

★ *Unobtrusive — almost silent in operation*

★ *Lightweight and portable — only 1.6 kilograms*

★ *Small enough to fit on the most cluttered desk*

★ *Power from batteries or mains adaptor for freedom of use*

AFTER you've read the review of the Brother HR5-C printer, we're sure you'll all want to get your hands on one — and this is your chance to do it for free. To win the printer, courtesy of Jones and Brother of Manchester, just put in order of importance the six features of the machine listed above. For instance, if you think "Lightweight and portable" is most important, write 1; B, and so on. Then complete this tie-breaker in an apt, original and amusing manner in fifteen words or fewer; "I want to have a little Brother because..."

Put your entry with your name and address on a POSTCARD and send it to Brother Contest, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP, to arrive by the last working day of July. The winner will be announced in the September issue. Normal rules apply.

The winners of the New Generation contest in the May issue are J R Winstanley, whose prize is a canoeing holiday at the Folkstone Activity Holiday Centre; and twenty runners-up receiving copies of Shoot the Rapids or Cliff Hanger are T Whitehead, Tadworth; M Detham, Cork; C L Ward, Wymondham; J Mitchell, Billingham; A Wood, Leeds; N White, Gt Yarmouth; D Gamble, Drighlington; J W Smith, Sullom; M Griffiths, Rochester; A Newton, Ripon; P D Mantz, Portsmouth; T Dutton, Westerham; E Watson, Balbeggie; D J Roberts, Stevenage; M McKenzie, Dunfermline; P G Lupton, Eshwinning; S J G Reeves, Birmingham; M Sutton, Tamworth; D Perritt, Bradford; E Mason, Hove.

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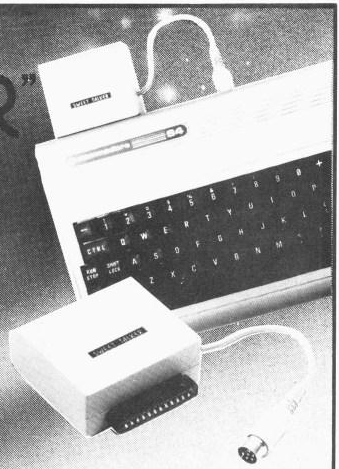

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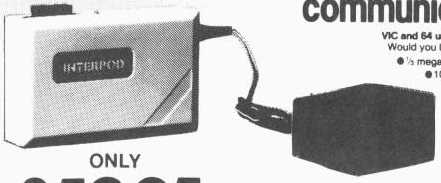

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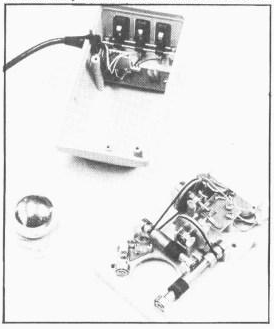
Meeting the mouse

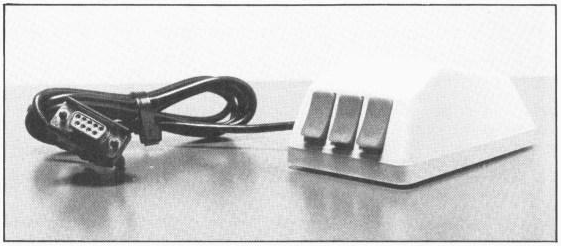
***John Cochrane** looks at SMC's Magic Mouse and finds himself converted to WIMPs — and getting some help with his sprites*

SIX MONTHS ago I knew virtually nothing about mice. Sure I'd read the reviews of Apple mice and seen some of the fuss as other manufacturers rushed to produce their own, along with some dubious sounding techniques for producing something called windows. So what? A mouse conceptually seemed to me to be nothing much more than a new fancy kind of joystick, the window software an interesting but rather useless way of cluttering up the screen. I was wrong and I now regard WIMPs (Window, Icon, and Mouse Programs) in a completely different light.

A good mouse-based system is much easier to use than a conventional keyboard-only one. It seems that we humans are not as well adapted to the technological age as we sometimes assume, we still perform better when faced with pictures than when trying to interpret words. I suppose it's a little like the difference between looking at a map and reading a verbal description of a town centre, they both have their uses but the map tends to be much more useful if you are not to get lost.

Mouse systems are much like sophisticated menu-driven software. You start off with something simple and select items until you get exactly where you want to be. As you move the mouse the movement is detected by the computer and translated to the screen where a pointer (an arrow or sometimes a small hand) moves with the mouse. Move the mouse forwards on your desk and the pointer moves up on the screen. The mouse also has from one to three buttons on the front, just where your fingers naturally rest. Move the pointer on the screen to a picture of a floppy disc and press one of the buttons and the system will immediately list the contents of the disc.





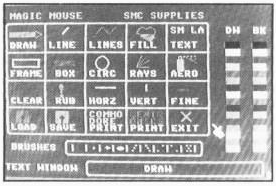
This may sound trivial but is one hell of a lot quicker than using the keyboard.

There is much more to a good mouse system of course, but you get the idea. Mice are quick and easy to use. The icon system, which provides those little pictures of discs or pocket calculators recognised by the system as components of a menu, makes life easy. You can present much more information on a screen of icons than trying to use words. Windows are used to produce rapid changes in the screen display, for example to give flip-down extensions to a particular icon entry on a screen menu. For example, select the calculator icon and a working image of a hand-held calculator will flip onto screen to be removed again as soon as you get fed up with it.

Iconography

But let's get on with the review. The Magic Mouse is a package for the C64 which gives you not just the mouse itself and the vital software to run the thing with your own software but also an art package, a sprite designer, and an icon (or user-defined graphic) designer. Of these, I found the sprite and icon designers to be the most useful. It is normally a pain in the neck to try and set up sprites, especially with the multi-colour option there to confuse things. Sprite designing using a mouse is much more straightforward. A large screen image gives you your chosen pixel positions, which you can alter one by one, whilst a small side-screen shows the full-colour sprite as it would appear when used.

A high-resolution art package should be just what the doctor ordered for the C64. This one allows you to create 16 bit-mapped pictures which can be used in your own programs, or just displayed. Resolution is 160 x 200 pixels. Magic Mouse gives you most of the usual options, such as line thickness and type, colour, a fill routine, and so on, but these options are



held on a separate screen from the picture-screen. A screen dump option for Commodore and Centronics printers is included, and there are tape and disk save routines. The software gives you a full sixteen colours and uses some clever software to match the low-resolution colours used by the C64 to the high resolution picture that you are working on.

The mouse itself is rather large and I found it less comfortable to use than others. The three buttons though have a good positive feel, and the lead which plugs into joystick port two is nice and long, although I was unhappy trying to use the thing on my already cluttered desk!

SMC's Magic Mouse is the first such product for the 64, although there are others on the way including one from Commodore themselves. Use of the mouse itself and the way that the software works must be left to personal preference, so make sure that you have a go with any system you're interested in before you buy. ■

Hard/Software: *Magic Mouse*
Micro: *Commodore 64*
Price: *£59.95*
Supplier: *SMC Supplies, 11 Western Parade, Great North Road, Barnet, Herts (01-441 1282)*

Lingo bingo

Don't feel that your 64 is restricted to operating in Basic — it can learn new languages more easily than you can! ***Tony Harrison-Smith*** *brushes up on his COMAL, FORTH, ADA, LOGO and PASCAL*

MANY 64 USERS, realising the drawbacks of Basic, would like to use a new language, but not go to a "low level" language such as machine code. In this article we'll look at alternatives like Ada, Forth, Logo, Pascal and Comal. Forth, Pascal, Ada and Comal are all compiled languages, which means that they convert the program which you enter to a sort of machine code; this allows the program to run a lot faster. The article can only give a brief preview of the languages, but it should be enough to show the advantages of each.

FORTH

Forth is the most unusual of the languages reviewed in this article. The language was developed by Charles Moore in the early 1960's, as a language for controlling radio telescopes.

The structure of Forth differs from all the others by not using line numbers, the program is build of individual 'words' or procedures. The method of programming is the top down method. where the low level words are first, and only perform one single task. Following on from these are the next level words, which combine several simple tasks to perform a more complicated one. The last 'word' in the program will be the controller. This will string together all the middle level words in the sequence required for the program. Using this method of programming means that Forth is a very powerful language, as the programmer can tailor it to his requirements. A lot of video games have been written in Forth as it is a very fast language.

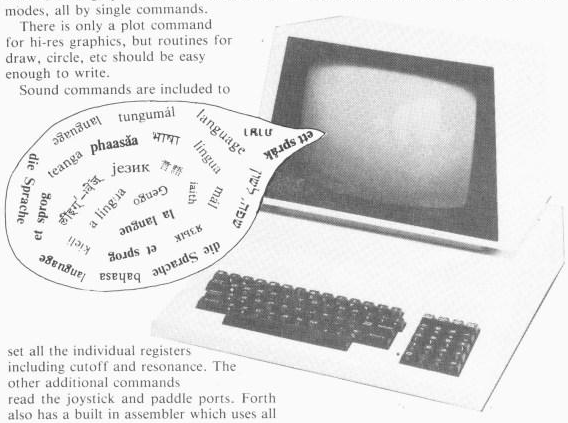
The program used for this review was the C64 Forth+ by Melbourne House Publishers. This is a version of the standard Fig-Forth with added commands. This program, as with most packages, uses an ingenious system to increase the memory capacity of the Commodore 64. The main memory is held on disk with the computer calling in the information as required; this is called Ram-Disk. For tape users a section of memory is set aside to imitate a disk drive.

The most difficult art to master when starting with Forth is the art of using the stack and "reverse Polish notation". This means that to add two numbers, instead of entering 5+4 and expecting the answer 9 you have to enter 5 4 + with the operator being entered last. Once you have entered the numbers in the wrong way several times, you will get the hang of it!

All the standard features of these 'improved' languages are included in this package including if/then/else, loop/until, while/repeat etc. Graphics commands include the switching between multi colour, normal colour, extended background colour, hi-res graphics and low-res graphics modes, all by single commands.

There is only a plot command for hi-res graphics, but routines for draw, circle, etc should be easy enough to write.

Sound commands are included to set all the individual registers including cutoff and resonance. The other additional commands read the joystick and paddle ports. Forth also has a built in assembler which uses all the standard op codes.



With this package error messages are only given as a number, and the meaning of the error has to be looked up, at least until you recognise the usual ones. The manual is not a tutorial, only a reference manual, so I would suggest that if you buy this package, you buy a good "teach yourself" book on Forth. I found that Forth was more difficult to learn, as it uses different techniques to other languages, but it is very powerful and fast.

ADA

Most computer users know that to make machine code programming easier you use an assembler. Imagine a language that would allow you to write your program in a high level format, for example Pascal or Basic, and then convert it to assembler for you. The language should then allow the machine code program to be loaded directly into memory, and be controlled by the existing Basic in the computer. There is such a program, it is called **Ada**, and the 64 implementation is published by First Software.

Ada was written for use on mainframe computers, originally to write the programs for controlling American guided missiles. The language is named after the Countess

Ada Lovelace, who is considered to have been the world's first programmer. The package includes a 77 page training manual and a disk containing an Editor, Syntax checker, Grammar checker, Assembler and a Disassembler. Also included are several useful routines, and a demo program. The Training manual is good, but there is only a contents page not a menu. When you start learning a language, a good menu is vital for finding individual commands.

The Editor allows a program to be written in a high level language before converting to assembler. There are three menus used in the editor, the start menu, write/edit menu and the command menu. These menus make the writing and editing of a program very easy. The start menu allows the changing of the colours used for background, border and pen as well as switching on repeating keys if required. The write/edit menu allows the listing, writing and editing of a program in memory. The last menu, the command menu, controls the disk drive, i.e. save a program, deletes programs etc, and also starts the compiler off when required. Ada will not work with tape decks, only disk drives.

The syntax checker, grammar checker and assembler are all part of the compiling operation which converts the program written by the editor to a machine code program. The disassembler is only included for later checking of the machine code programs. The compiler also allows a trace routine to be inserted into the machine code program to try and find any errors in the running of it. The high level language used by the editor is of the standard Basic, with loops and if/then/else and so on, but it does not contain any graphic or sound commands. A very useful feature is that a program can be written in several parts, and all the parts can be called by a program and assembled together.

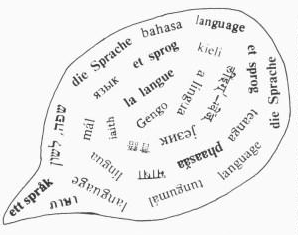
When I was first told about a package written to control missiles, I expected a very fast games writing language, and on first impressions I was disappointed. But having used the language and understood some of its capabilities I am very impressed, as it eliminates the tedium of machine code programming.

LOGO

Logo is an education based language. It was developed by Professor Seymor Papert, to allow computers to become accessable to children of as young as 3 years old. The language is a series of very simple commands which can move an object called a "turtle" around a screen. The simplicity of this language allows very young children to draw shapes and patterns very quickly. As the child improves, Logo allows the development of more complicated programs and teaches the student how to think and program in a structured way.

Commodore's 64 Logo package includes a master disk with Logo, and also a utilities disk with several useful programs and ideas.

The turtle can be either a floor mounted motorised unit such as the Valient device, which draws on large sheets of paper, or as in this package a little triangle shape on the



computer screen. To move the turtle around you use commands such as forward 50, which will move the turtle forward 50 units, and left, right and so on. Most commands can be shortened to two letters, such as fd for forward. The pen can be controlled by commands such as penup, pendown and pencolour. If the pen is down, then wherever the turtle goes it leaves a 'trail' behind it; this is the equivalent of a draw command on most other Hi-res packages. The turtle can be switched off by the command "hideturtle".

Pictures created, and also the programs which created them, can be saved to tape or disk for later use. There are several single word commands to make disk operation easier for the younger user. The screen can be split to show several lines of text and the rest Hi-res graphics, or set to all Hi-res graphics by simple commands.

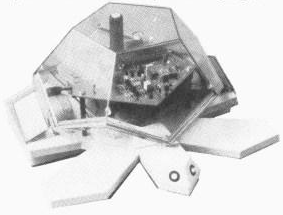
The utilities disk contains procedures for printing pictures to a printer, putting text onto graphic screens, drawing arcs and a simple word processor to name just a few.

A very helpful book is the 'Commodore 64 Logo primer' by Gary Bitter and Nancy Watson. The book is published by Prentice Hall, and is well worth the purchase as it gives several ideas on how to use Logo.

PASCAL

Pascal was developed by a Swiss Professor Dr N Wirth, as a computer language for teaching structured programming. Structured programming is the method based on the writing of programs in blocks. Each block or routine has only one start and one finish, and will always perform a set task. The great advantage of this method is that each block or routine can be fully tested individually and can be transported between programs without any fear of it not working.

The Pascal versions used in this article are the Pascal 64 by First Publishing, and the Oxford Pascal by Oxford Computer Systems. Pascal is a very strict language, in



that there is not the flexibility of Basic, though to many people this is seen as a good thing. Programs in pascal have to be written to a set pattern from which you cannot deviate. For example, the sub-routines must always be before the main program, and so on.

Pascal programs have to be well planned before they are coded, as the program is compiled before running, therefore any problems or errors mean that the uncompiled program (source code) has to be reloaded into memory, corrected and then recompiled before running again. This method of coding means that the programs will run a lot faster, but the drawback is that debugging and correcting take a lot longer. Oxford Pascal has the added advantage of having a compiler resident in the memory, so that short programs and routines can be written quickly without the

reloading and recompiling everytime.

Pascal has a lot of advantages over Basic in the power of the language. With Pascal, variable names can be of sufficient length to be meaningful, arrays can have minues indeces and it is possible to write interrupt routines within the program without going into machine code. The sequence of writing programs in Pascal is as follows. The first line of the program is usually the program name or header, though this is optional with these packages. The next lines must declare all the variables used in the program and their type, for example real, integer, chr or boolean.

The next lines contain all the subroutines that will be called. After all the above declarations the main program can then be written.

Hi-res graphics are accommodated with both these packages, with the ability to switch between text and graphics by command. The graphic commands available cover sprites, plot and unplot. There is not a draw command, but a draw routine is given in the Pascal 64 manual. The Oxford Pascal does not have the sprite command, but it does have additional commands such as pen, ink paper etc. ▶

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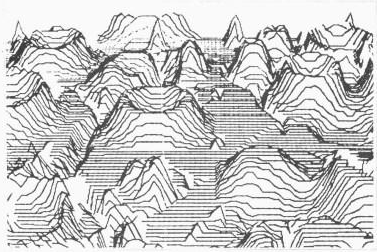

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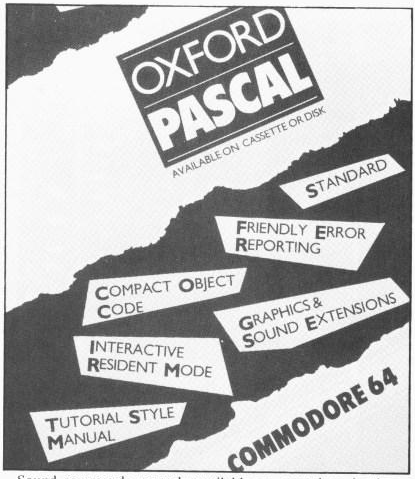


Sound commands are only available on the Oxford Pascal package and they cover envelope creation and voice controls.

Both the packages are very good, with excellent manuals which will allow you to start using Pascal without the need to purchase any other books, though further reading would be advisable to get the full potential of the language.

▲ COMAL

Comal is a language which combines the structure of Pascal with the user friendliness of Basic. The Commodore cartridge of Comal version 2.0 also has Logo commands contained in it for graphics control. The cartridge increases the Commodore 64 to 128k of memory with 60k of RAM. Although Comal is a compiled language, it uses a run-time compiler which means that the program is compiled in memory just before it is run. This method gives the program speed without the need to load and run a compiler program when editing.

On the general programming side, there are several useful editing features such as auto line numbering and renumbering a complete program. A useful editing technique is the use of the edit and list commands. Edit will display the program onto the screen in the normal manner, but the command list will display the program with the loops and procedures indented to allow the ease of tracing a program. When entering a program the syntax of each line is checked as it is entered. Errors are displayed and corrected before each line is entered into the program. This method of checking removes most of the silly errors which creep in when programming. Programs and routines can also be merged using the list/enter commands.

In Comal, variable names can be up to 78 characters long which allow, as in Pascal, meaningful names to be used. One drawback is that a numeric and a string variable cannot have the same name, i.e. name and name$ cannot appear in the same program. Loops are covered in Comal by for/enfor, repeat/until, and if/then/else as in Pascal.

Procedures are used in Comal the same way as they are in Pascal; they are similar to Basic subroutines, except that they have two major improvements. The first is that they are called by name not by line number. This allows them to be placed or moved anywhere in the program. Comal differs from Pascal in that the procedures may be anywhere in the program, even nested in the main program block. The other difference to subroutines is that variables in the procedure need not affect any variable in the main program. This is achieved by making a procedure closed.

Graphics are covered by Logo type commands; forward, left and so on. Logo commands can be entered directly from outside a program so that graphics can be drawn by the younger members of the family without having to learn how to program. Hi-res is covered by normal graphic commands such as pen, paper, draw etc. The graphics screen can be switched on or off by the "setgraphic" command. In Comal this command does not lose the contents of the text or graphics screen, so that a program can switch between them at will.

Sound is covered by single keywords to control envelope, voice and so on. A very useful book about Comal is the *Comal Handbook* by Len Lindsay. This book, published by Prentice Hall is the Comal bible, with details of all the Comal commands in an easy to read style, and offers many useful routines for use in programming.

As this article has shown, there are several languages for the Commodore 64 which will make the use of its capabilities a lot easier. Forth and Ada are very fast almost assembler type languages, and Logo is a very good introduction to computing for younger people. Pascal is a far more structured language which is used in a lot of higher education areas. Comal is a combination of Pascal and Logo with the user friendliness of Basic.

Although Basic is bound to remain the most popular language for the home programmer, it's worth examining the alternatives — the more languages you speak, the better you can communicate with your 64.

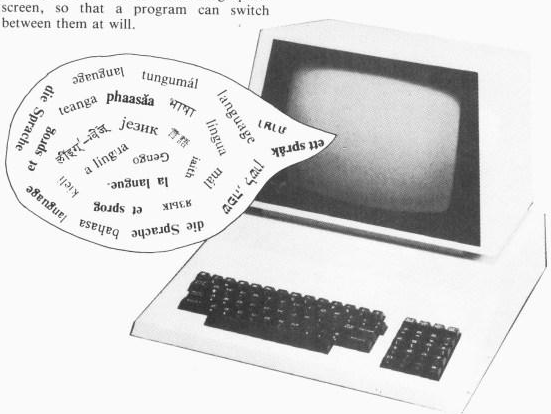
▲ FORTH Melbourne House, Castle Yard House, Castle Yard, Richmond, TW10 6TF, 01-940 6064

▲ ADA First Publishing, Unit 20B, Horseshoe Road, Horseshoe Park, Pangbourne, Berks, 07357-5244

▲ LOGO Commodore, 1 Hunters Road, Weldon North Industrial Estate, Corby, Northants, 0536-205555

▲ PASCAL First Publishing (as above); Oxford Computer Systems, Hensington Road, Woodstock, Oxford, 0993-812700

▲ COMAL Commodore, 1 Hunters Road, Weldon North Industrial Estate, Corby, Northants, 0536-205555



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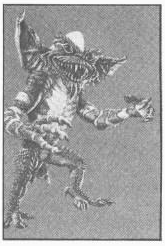
In the land of youth

Fighting off the Gremlins and exploring Tir Na Nog, ***Ken Matthews*** *buckles on the adventurer's sword and bravely sets forth*

BRIAN HAWORTH'S name has long been known to many adventurers, due to the success of the Channel 8 (Digital Fantasia) series of Mysterious Adventures. Brian has recently joined the team at Adventure International, and now has a very full work load translating Scott Adams' adventures to other machines as well as working on additions to the Mysterious Adventures which are now bing marketed by Adventure International. AI's latest game, written by Brian, is featured this month — GREMLINS — the Adventure.



Yum, yum! Gremlins on the loose in Adventure International's "enchanting" game

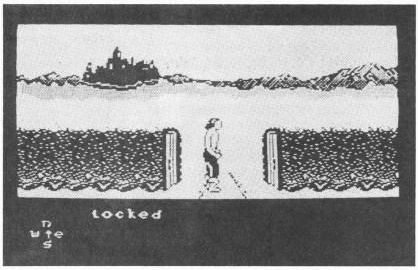
Recent months have seen many game-of-the-book/film titles that have proved to be half-hearted attempts to cash in on the financial success of the original production. Happily, this is not true of Gremlins — it lives up to all of the modest, and most of the less so, claims made for it!

This enchanting little game is remarkable for two main features — the very high quality graphics and the use of animation in some of the scenes.

The plot casts you as the films hero, with the task of ridding Kingston Falls of the Gremlins which threaten to overun it. These evil little tykes have 'bred' from your cute little Gremlin, Gizmo, who you have allowed to get wet, and fed after midnight.

The game itself is not large or particularly difficult, but provides plenty of interesting and amusing things to do, with and to various bands of wandering Gremlins. Almost all of the locations feature graphics which show great attention to detail and, unlike some, really add to the atmosphere of the game. Getting objects or performing some tasks often provoke an appropriate response in the pictures, giving the player a much better sense of 'taking part'. The animation in some screens is quite funny — especially the blended Gremlin and, for the more perverse, the Gremlin flasher!

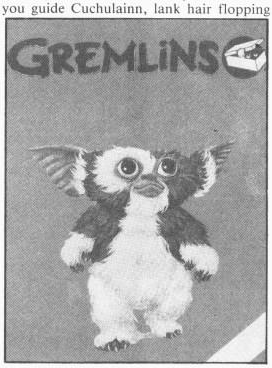
Gremlins is a well written, well presented and very enjoyable game, plotted close enough to the film to appeal to fans yet different enough to provide many challenges to those more familiar with the antics of Stripe and his gang of nasties.



The second of this month's games is a translation of the Spectrum hit — Tir Na Nog.

The concept of Gargoyle's game is truly original, featuring a quest in the Celtic 'Other World' where the spirit of the hero Cuchulainn must journey in search of the fragments of the Seal of Calum and, having gathered them, re-unite the fragments and activate the seal to bind the Great Enemy in his timeless land.

The programming of this adventure is nothing short of brilliant, as you will see as you guide Cuchulainn, lank hair flopping as he walks, through the almost countless screens of The Land of Youth to complete the dozens of minor quests necessary to recover the fragments of the seal and coded information to restore the artefact to full power. The high-resolution graphics are unlike anything seen before on the 64.



Mapping

The shade of our hero has no need of food or drink, but as well as the problems of finding the object of the real quest he has to deal with many independently animated and motivated creatures, such as the once-noble Sidhe who seek to thwart you at every turn, although some characters can be won over.

The game and its scenery are so vast that many hours are needed just for a preliminary exploration and mapping is a real headache but, as you find new pathways and items, the sense of discovery and achievement is very satisfying.

The background in the accompanying booklet and postcard map of Tir Na Nog give a package which is excellent value for money and which will provide many, many hours of enjoyable play.

As a footnote, the sequel to TNN, Dun Daroch, is nearly complete and, hopefully, will be released on Commodore and Spectrum at the same time.

Finally, as Barbara Conway is taking leave of these pages for now, I would be very pleased to hear from any of you with adventure problems, comments and suggestions as to what you would like to see on this page. So get pen to paper and let us help you! ■

Does it all add up?

This handy 64/Vic 20 utility program by ***Mike Hart*** *allows you to incorporate a checksum routine in your own programs, making data entry easier*

AS PROGRAMMERS will know, there is no such thing as an idea that cannot be improved upon. The idea for CHECKSUM came from an appendix to the magnificent book by Raeto West, *Programming the VIC*, in which there is a specialised routine which checks that a program has been entered correctly from a listing. This appendix was actually written by one Charles Brannon, and is entitled 'The Automatic Proofreader'.

Once my program has been entered and RUN, then a checksum of each line typed in will appear in reverse at the top left hand corner of the screen. This particular CHECKSUM will ignore spaces that you put into the line, and will not detect transpositions of letters; if you type POEK instead of POKE the checksum will still be the same, as the characters will add up to the same checksum. In the majority of cases, however, CHECKSUM will detect if you have made a significant error. Keywords need to be typed in full and not abbreviated to generate the correct checksum.

CHECKSUM is really a utility for software writers. When the final version of a program has been developed, then putting a listing through CHECKSUM will reveal the checksum for each particular line. These checksums can then be put in the form of a table, or even appended as REMs to the end of eachline (on the understanding that they are not to be typed in).

Squeezed

The original PROOFREADER occupied part of the cassette buffer, where it was likely to be overwritten once you loaded a new program in on tape. This version has been severely 'squeezed' so that it will exactly fit into an area of memory that happens to be safe, and is available on both the C-64 and the VICs. However, it has been written in such a way that it can relocate should it conflict with another favorite routine that occupies the same space. Whilst the original version catered for both VICS and C-64's, this version does not attempt to do so but it written for the C-64 with adaptations for the VIC. It has been tested out on both machines. A disassembly is provided for those who like to see how such things work, and can learn from them!

I hope that you find this utility useful if you wish to ensure that a vital section of code is correctly entered — typically it will be DATA for a machine language routine, but the same principle works just as well on BASIC programs. ■

```
                CHECKSUM   BY MIKE HART

10 REM  ****   CHECKSUM   ****
11 :
12 REM  ***  BY MIKE HART  ***
13 :
14 REM  ADAPTED FROM C.BRANNON'S
15 REM   ROUTINE IN RAETO WEST'S
16 REM   'PROGRAMMING THE VIC'
17 REM  [COMPUTE! PUBLICATIONS]
18 REM          1984
19 :
20 REM VERSION BY DEFAULT FOR C-64
21 :
22 REM FOR VIC-20 CHANGE :
23 :
24 REM BYTE 5 LINE 101 FROM  87 TO  14
25 REM BYTE 6 LINE 101 FROM 241 TO 242
26 REM BYTE 3 LINE 109 FROM 109 TO 221
27 :
28 REM CHECKSUM IN LINE 111 TO 12190
29 :
30 S=679:REM START OF CODE
31 :
32 FOR J=S TO S+87:READ X:T=T+X
33 POKE J,X:NEXT J
34 READ C:IF T<>C THEN 37
35 PRINT "DATA ERROR!":END
36 :
37 POKE 254,0:REM ZERO CHECKSUM HOLDER
39 :
39 REM THEN POKE MSB,LSB OF START OF
40 REM ROUTINE AFTER RELOCATION...
41 :
42 POKE S+3,(S+11)/256          :REM MSB
43 POKE S+1,S+11-PEEK(S+3)*256:REM LSB
44 :
45 SYS(S): REM ACTIVATE
46 :
47 REM NEW HERE IF YOU LIKE..
48 :
49 END
50 :
100 DATA 169,178,162,2,141,36,3,142
101 DATA 37,3,96,32,87,241,0,134
102 DATA 251,132,252,72,201,13,240,16
103 DATA 201,32,240,5,24,101,254,133
104 DATA 254,104,166,251,164,252,40,96
105 DATA 32,210,255,166,214,202,138,72
106 DATA 160,0,132,216,169,19,32,210
107 DATA 255,169,18,32,210,255,169,58
108 DATA 32,210,255,166,254,132,254,152
109 DATA 32,205,189,169,32,32,210,255
110 DATA 32,210,255,164,133,214,144,201
111 DATA 12230
```

```
                CHECKSUM DISASSEMBLY

READY.

B*
   PC   SR AC XR YR SP
.;0008 30 4F 4F 00 F6
.
02A7 A9 B2      LDA #$B2
02A9 A2 02      LDX #$02
02AB 8D 24 03   STA $0324
02AE 8E 25 03   STX $0325
02B1 60         RTS
02B2 20 57 F1   JSR $F157
02B5 08         PHP
02B6 86 FB      STX $FB
02B8 84 FC      STY $FC
02BA 48         PHA
02BB C9 0D      CMP #$0D
02BD F0 10      BEQ $02CF
02BF C9 20      CMP #$20
02C1 F0 05      BEQ $02C8
02C3 18         CLC
02C4 65 FE      ADC $FE
02C6 85 FE      STA $FE
02C8 68         PLA
02C9 A6 FB      LDX $FB
02CB A4 FC      LDY $FC
02CD 28         PLP
02CE 60         RTS
02CF 20 D2 FF   JSR $FFD2
02D2 A6 D6      LDX $D6
02D4 CA         DEX
02D5 8A         TXA
02D6 48         PHA
02D7 A0 00      LDY #$00
02D9 84 D8      STY $D8
02DB A9 13      LDA #$13
02DD 20 D2 FF   JSR $FFD2
02E0 A9 12      LDA #$12
02E2 20 D2 FF   JSR $FFD2
02E5 A9 3A      LDA #$3A
02E7 20 D2 FF   JSR $FFD2
02EA A6 FE      LDX $FE
02EC 84 FE      STY $FE
02EE 98         TYA
02EF 20 CD BD   JSR $BDCD
02F2 A9 20      LDA #$20
02F4 20 D2 FF   JSR $FFD2
02F7 20 D2 FF   JSR $FFD2
02FA 68         PLA
02FB 85 D6      STA $D6
02FD 90 C9      BCC $02C8
```

Playalongacommodore

. . . or how to turn your Commodore into a video jukebox courtesy of Music Sales

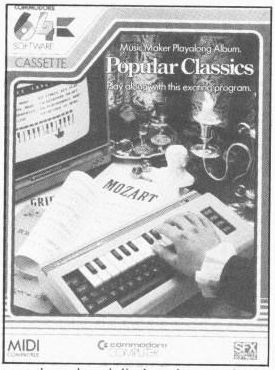
THE LATEST additions to the Music Sales range of products distributed by Commodore, are the software equivalents of a "jukebox" — the Playalong albums.

Ideal for musical beginners, the three packages, Popular Classics, Pop Hits, and Beatles, come on cassette or disk at £9.95

The package we looked at was Popular Classics, but each of the "albums" follows the same format. They can be used purely for entertainment, to play cleverly-programmed versions of well-known tunes, or they can be teaching aids which will play an accompaniment for which you can learn the melody.

The package contains the software, manual and a music booklet, which contains simple versions of the music on the album. In the case of the Popular Classics package, these include favourites such as *Hall of the Mountain King, The Toreador's Song* and *Dance of the Reed Flutes.*

On loading the software, you have the choice of twelve titles, each of which has two versions, the full version of the simplified one printed in the music book. You can also select various options such as Single Key Play, Rehearsal Mode or Performance Mode. In Single Key mode, any key you press will play one note of the melody line and advance the accompaniment. This feature allows you to learn timing from the music book.



Rehearsal mode plays the accompaniment through and displays the notes in the melody for you to add. You can use the Music Maker clip-on keyboard to play tunes, or just press the appropriate keys.

Performance mode lets you play the melody, but the accompaniment won't wait for you to catch up!

If you wish the music can be accompanied by graphics showing which voice is playing, or the current pitch.

Concert or Jukebox mode allows you to chain tunes together. You can tune the music to other instruments and vary the tempo as you require, but perhaps most interestingly you can connect up a MIDI equipped synthesiser to play the music (once you've invested in a suitable MIDI interface such as that by Jellinghaus costing £29).

In Omni mode, all three musical tracks are sent out on one MIDI channel, so one MIDI synth will play all three tracks in the same voice. In Poly mode, the three tracks are transmitted on three different MIDI channels, so you can connect up three MIDI synths to play the three tracks in different voices. Lastly, the most powerful mode, Mono, allows some keyboards such as the Sequential SixTrax, Oberheim Expander and some Casios to play the three tracks in different voices simultaneously.

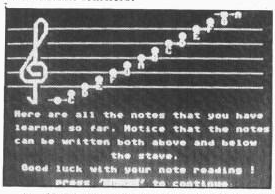
The Playalong Albums are tremendous fun if you accept the limitation of not being able to write your own music, but the forthcoming ProSynth, Sampler and Pazzaz packages are all compatible with the system, and will expanded its potential enormously. ■

Product: Playalong Albums
Micro: CBM 64
Supplier: Commodore
Price: £9.95

Every good boy . . .

. . . deserves fun. Chalksoft makes it child's play to learn music

NOTE INVADERS is a simple and useful music teaching program from the educational software house Chalksoft. It's ideal for younger musicians, as it helps to teach the notes as they appear on the musical stave, and is at the same time a "shoot-'em-up" game which should retain the interest of reluctant learners.

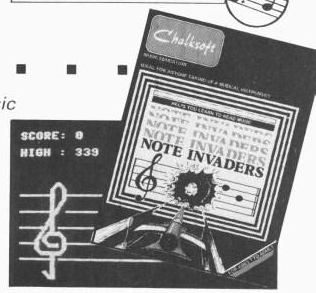

Here are all the notes that you have learned so far. Notice that the notes can be written both above and below the stave.
Good luck with your note reading !
press 'RETURN' to continue.

At £9.95 for the cassette version and £12.95 for disk, Note Invaders includes three programs. The first, Invaders, allows you to select a treble or bass stave, then prints up a note which moves from left to right. Your task is to decide what note it is, and press the appropriate key, A to G. If you choose correctly, your "laser base" will destroy the note. You are then awarded a score depending on how long you took to respond. If you choose the wrong note, you lose a life.

The second program, Staff 1, demonstrates the notes on the treble and bass clefs, and puts questions to you which have to be answered within a time limit. The graphic demonstrations are accompanied by appropriate musical sounds.

The third part of the program, Staff 2, provides a test of twenty questions, and if you make any mistakes in answering them the whole staff with the right notes is displayed as a reminder.

Staff 1 and Staff 2 have options for teachers, so that individuals or classes can use the program. Scores can be kept and recalled at any time.



Note Invaders is part part of a music teaching series which includes Rhythm and Pitch testing programs. For learners of 7 upwards, Chalksoft's programs form an entertaining form of learning which avoid the usual pitfalls of repetition and lack of graphic interest. ■

Program: Note Invaders, 64
Supplier: Chalksoft, PO Box 49, Spalding, Lancs, Lincolnshire, PE11 1NZ, 0775
Price: £9.95 tape, £12.95 disk

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Creative

A change of character

Fed up with the 64's boring old character set? Now you can use sixteen new sets and define your own using Font 64 from Basic Software

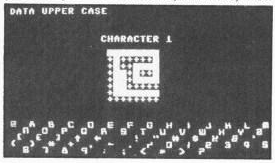
WHEN WRITING your own Basic programs, there's nothing more frustrating than being limited to the 64's standard character set. It's not very interesting to look at, and, more to the point, it gives programs an amateurish look which most commercial software avoids by using specially-defined characters.

Looking at recent releases, programs like Hewson's **Gribbly's Day Out** and Alligata's **Hypercircuit** are excellent examples of programs enhanced with special character sets. Now you can achieve similarly professional results with a package from Basic Software, Font 64.

The package, supplied on cassette, contains 16 alternative character sets, or fonts, plus the option to devise and store your own sets.

So how does it work? The 64 contains two separate fonts, one for upper case and graphics and one for lower case and graphics, and any of these can be used in reverse. Font 64 allows you to create your own alternative to font one, but you lose the ability to use font two in the process. After selecting the new font you can decide at any time whether to use the normal or new character sets.

The alternative fonts take up 2K of memory starting at 2048, and can be called up into a program using a simple POKE. The program on loading moves the bottom of Basic to make way for the new sets, then presents you with a menu; alter set, view



set, select font, and end. Options one and two both display a list of the fonts available, which include Wide, Data, Thick, Thin, Greek, Scientific, Joined, and so on, in upper or lower case. After choosing the set you want to work on, the full character set is displayed and a grid with an enlargement of one of the characters is printed up. You can then use the cursor keys to redraw any of the characters before sending the set back into memory.

The Select Font option allows you to choose four character sets for your program, and, noting the poke numbers associated with each, reverse or rotate them before storing them.

After quitting the program you can call the new character sets into your own program at any time by using POKE 53272,18, and using shift and reverse to select any of the four stored fonts.

If you wish to save a program including the new fonts, you must go through a short save routine which makes sure the fonts are included in the save, and on re-running the program you must POKE 44,16 before use.

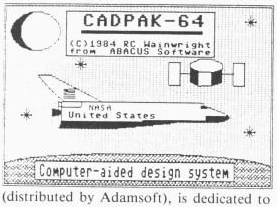
Font 64 can be saved to disk, but isn't sophisticated enough to allow you to perform print-outs of the new character sets.

Font 64 costs £5.00 from Basic Software, 4 Chapel Villas, Dalgety Bay, Dunfermline, Fife, 0383-823745.

Turning on to Video

Adamsoft's Videobasic adds graphics and sound commands to make the creative 64 programmer's life that much easier

CREATIVE users of the 64 often bemoan its lack of commands for graphics and sound. One solution is to buy a Basic extension package which removes the necessity for using cumbersome POKEs. The latest on the market, **Videobasic** from Abacus



(distributed by Adamsoft), is dedicated to making sound and graphics a less daunting proposition.

Videobasic uses fifty extra commands, demonstrated in a short introductory routine. Graphics commands include HIRES, to set the screen, MULTI, for a multicolour screen, X and Y for plotting points, DUMP to dump a screen to a printer (including the MPS-802), DRAW, BOX, CIRCLE, BLOCK, FILL, and so on, which are fairly self-explanatory.

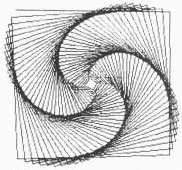
There are several commands for sprite development, positioning, collision, detection, and colouring, and LOGO-type turtle graphics commands including TCOLOR to set colour, TDOWN/TUP to activate and deactivate the "pen", and movement and positioning commands.

Several functions are particularly useful for games — JOY and PADDLE return values from the controller ports, and PEN reads X, Y co-ordinates from a lightpen.

The sound commands allow you to control most of the SID chip's parameters, including voice, waveform, ADSR, volume, pulse width, filters and effects. Tunes can be programmed to run at the same time as your Videobasic programs.

Other functions include screen saves, memory management, timers, repeats, STOP disable, and more. It can become very complex, though most competent Basic programmers will soon get the hang of Videobasic with the help of the tutorial programs on the disk.

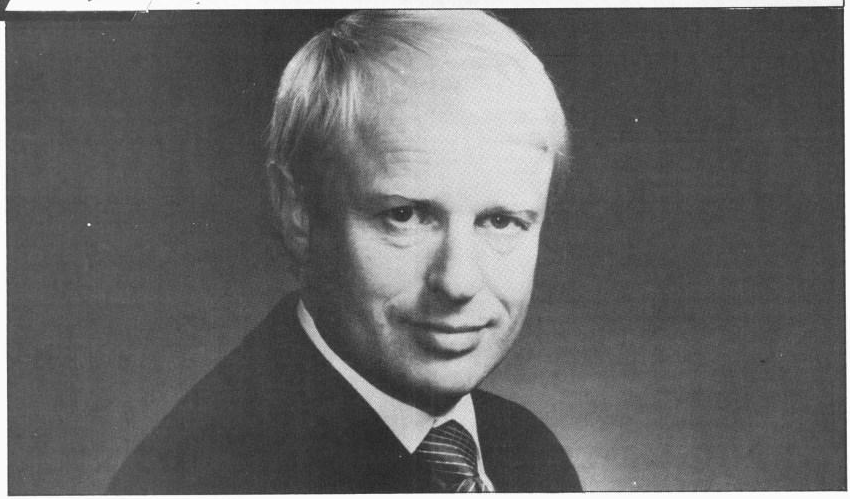
Videobasic's great merit is that it can generate free-standing copies. This means



that unlike packages such as Simon's Basic, it creates programs which can be run by 64 owners who don't have the package. ■

For more details, contact Adamsoft at 18 Norwich Avenue, Rochdale, Lancs, 0706-524304.

ProFile



Bessey means business

*Commodore's new general manager, **Nick Bessey**, hopes to conquer both the home and business micro markets. We reveal his ambitious plans*

"I EXPECT to be offering the 64 at its present price right up to the end of 1986. The price actions we have seen earlier this year are not supported by us. We expect the product to re-establish itself".

So says Nick Bessey, Commodore UK's new general manager, and the man who, more than anyone else, will be responsible for co-ordinating Commodore's development in this crucial stage of the UK market.

Nick Bessey, at 36, is the youngest national general manager in Commodore worldwide. His experience and reputation sprung from twelve years at International Business Machines — IBM, or "Big Blue" — though this doesn't mean that Commodore will be neglecting the home computer market in favour of the new PC-compatible machines, and the forthcoming Amiga and Unix micros.

Marketing

Whatever field Commodore enters, though, it's clear that marketing is the area in which they will either boom or bust. The quality of the machines has never been in question; poor backup and inadequate understanding of the market has led to the relative failure of the C16 and Plus/4, and the current difficulties of the 64.

As the key strategist behind IBM's retail marketing division, dealing with the "low-cost" products such as the PC, Nick Bessey is ideally suited to sort out these problems. His experience as a top salesman, and a planning manager in the Canadian, Japanese and Australian markets for IBM, gives him an understanding of the requirements of the international market as well as a good technical grounding — which could not be said for Bessey's predecessor, ex-United Dairies Howard Stanworth.

So what are Nick Bessey's plans to revive the flagging Commodore name, in the face of competition from Atari (now helmed by CBM founder Jack Tramiel)? The price of the 64 is not in question, despite the decisions by Lasky's and Boot's to discontinue stocking it at the present price. Selling at £129, in order to compete with the £149 Plus/4, no-one can make money on the 64 at Commodore's dealer prices. Bessey promises to outline his plans for retailers soon, and justify the price. "A strong restriction is what the thing costs us to make; the price is what we can afford. The 64 has excellent functions, more software than any other product on the market, and there's a high level of peripherals. I hope to visit the head offices of our 4-5,000 outlets — they have yet to hear the story. The High Street dealers are absolutely right to have issue with our marketing profile this year. They're very powerful in terms of market action, but Boot's and Lasky's together represented less than 7% of our volume sales last year. Discounting is very dangerous — it reflects a lack of confidence, and it doesn't move product. I'm sure the people who embarked on it are regretting it."

Inventory

Bessey plans to boost the 64's market profile by including bundled software in the price. But what of the C16 and the Plus/4? "The C16 is an excellent product, but sales are not as high as we hoped. The truth is that the retail price is not mine to determine, but discounting has not resulted in any significant product movement." On the Plus/4, Bessey is less optimistic, although he pledges software support from Commodore. He admits that the built-in software is poor, but suggests that there are possibilities for selling the machine with different inbuilt software or in combination with peripherals. Fortunately — from Commodore's point of view presumably, rather than from that of Plus/4 owners — "inventory is very modest".

What of the 128, the C64's successor, which offers the magic element of software compatibility? "It will definitely be available in June. The price will obviously be

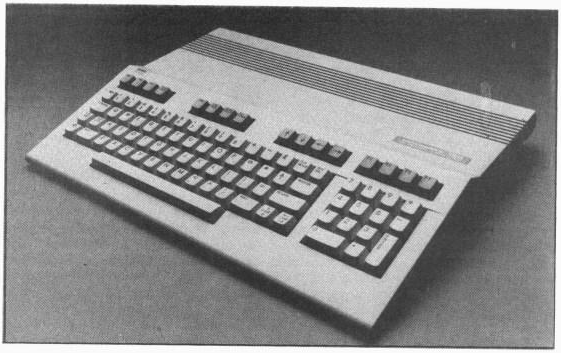
above that of the 64 . . . but the price is the only secret I've got left." All the technical specifications of the C128, its hardware and operating system, have now been released — all that remains is for the machine to be launched.

"Activity in the home computer market is changing. People will go home, and won't be happy to have a home computer which is only a game machine, or has a limited capability. People will also increasingly work at home — there's a convergence in the markets for home and business micros. That's why Commodore is in such a strong position — we are absolutely dominant in the home market worldwide."

Jack attack

The spectre of Atari, entering the market with the £129 model, the 128K 130XE, doesn't deter Bessey much. "Tramiel bothers me a great deal — because he causes turbulence which has very little to do with his ability to supply product."

On the business machines, Bessey manifests a more positive attitude which reflects his experience. "Our ability to offer — via our vertical integration — a low priced product, is unique. Because of our distribution network, the products are available anywhere in the country. The initial response to the PC is overwhelming — 400 units in the last week. We took a very mature attitude in not announcing until the product was ready. The first PC20's have gone out, and it's now readily available. The 10Mb version is only 18% more expensive than the basic IBM PC."



The C128 — "the price is the only secret I've got left"

"Commodore's position in the compatible market is well-timed. Most people understand what an IBM-PC compatible can do, but for our price people can afford to buy more, and use them for more modest applications. The computer age has not yet occurred for whole strata of people in the UK. They're still doing things in a Dickensian way."

Commodore's other attempt to lighten this Dickensian darkness comes in the form of the Amiga machine. "I don't think we will announce the Amiga this year, though. One of the prerequisites for a launch now is volume availability at the launch date. I was astonished by the Amiga when I saw it — its graphics are an overwhelming strong point, in terms of quality and flexibility." With a rumoured 256K RAM, 128K ROM, 68000 processor and advanced dedicated graphics chip, the Amiga should appeal to applications specialists, although it would clearly be an impressive games machine. Price estimates fall somewhere between $700 and $900.

So with the 128 taking over the home market, and the PC, Amiga and the Unix 900 machine on the business front, Commodore will have a powerful range of weapons in the 1986 micro war.

"People will be very confident in the Commodore name . . . it's a substantial name. But people don't associate Commodore with PC's, and I'm going to have to address that fact. That's why we're offering the 128 — you'll be able to do everything you could on the 64, with more powerful programming applications, 80 column display, and CP/M — the basis of some very satisfactory software."

Buoyant

"We have had a difficult post-Christmas period in terms of moving product, because of inventory still out there. In the UK, though, there's a very buoyant business systems market which we are going to enter very aggressively. In '85, we plan very substantial growth, over that of '83 and '84. It will be very profitable too, with the addition of the business systems. There has been some pain felt in recent months, but I feel very optimistic. I would still be at IBM otherwise; I wouldn't have come unless I felt total confidence in Commodore."

The appointment of Paul Welch to the position of marketing manager should help to stabilise Commodore's UK operation, in the wake of the departure of Stanworth, Aileen Bradley and David Gerrard.

"The team will be very well equipped to deal with the aggressive programmes I intend to run shortly. Quite a lot of things have to be improved; service to dealers, how much we reflect their requirements and so on. But one of the things that was established before I arrived was making sure we had adequate products."

"I want to be leader in all the micro markets — home, home professional, IBM-compatible, professional — and I understand I have got my work cut out!"■

Spreading the word

Two top-of-the-line word processors — Superscript and Vizawrite — tested and compared by **Trevor Doherty**

COMMODORE 64 owners have the widest choice of word processors for any home machine. Choosing the right one to suit your needs for home or small business use is important, as it is probably going to be your single most-used piece of business software.

Because a page of text can be much wider than the screen — typically 80 characters or more — any 64 word processor must find a way of entering and editing text on the narrower 40 column screen and then allowing it to be printed out on wider paper. The two top-of-the-line word processors I am comparing, Vizawrite 64 (Viza, £99.95, disk) and Superscript 64 (Precision, £99.95, disk) do this using different methods. Both products include a spelling checker; Vizawrite is also available without the speller, on disk or cartridge.

Updated

Superscript is a vastly updated and expanded version of Easyscript, which many people use because it came free with their disk-drive! If you are familiar with Easyscript you will find it quite easy to get on with Superscript, although I was being caught out by the changes at FIRST. Precision have an upgrade scheme for existing Easyscript users.

Superscript retains Easyscript's post-formatting approach to text entry and editing. Text is entered within the 40 columns of the screen and commands added to format the document when printed. You can pre-view the whole document on the screen in its printed format, by scrolling the screen sideways. The big difference compared with Easyscript is that Superscript *wordwraps;* it doesn't split words at the end of a line, making editing and reading the document on the screen easier. Superscript comes with an extensive manual, the first section being a tutorial. An audio learning cassette is included which will take you through the basic skills.

Boilerplating

The basic control key for Superscript is *F1* which places a menu across the top of the screen. Moving through the choices given shows a brief description underneath; highlight the right one, hit *return* and the command is carried out; although some choices have further sub-menus. At first this is the easy way, you get familiar with the options quickly, but once you become experienced Superscript allows you two faster ways of issuing commands.

Firstly you can use command initials; thus to erase a word — press F1 E W. For a number of commands there is a second way; again to erase a word — press *CTRL-D,* control sequences which would be familiar to anyone who has used *Wordstar* on a business machine. I found myself using a combination of all three methods! Just about every feature I have evern seen in a word processor is included in Superscript; search and replace, block move, indenting paragraphs, numeric tabs, calculations, merging, *boilerplating* (the ability to build up letters from standard paragraphs stored on disk) etc., etc. It is hard to imagine anyone ever using *all* the features. A vast range of printers are supported using printer definition files. You define the printer type, screen colours, paper sizes and so on, in a "defaults" file which loaded at start-up.

Advanced users will appreciate the ability to add commands by defining your own using *keyboard macros* assigned to a single key. These can be temporary or permanent, stored in the defaults file. Using these you can type a lengthy command sequence or even text like your name or address with a single keystroke. The spelling checker contains a 30,000 word dictionary and compared to *Easyspell* is much easier and quick to use.

To spell-check your document, Superscript first displays statistics of how many words, unique words, sentences and paragraphs there are. You can then list the words alphabetically or in frequency order if you wish, then go on and correct spelling mistakes which Superscript highlights. If you copied the dictionary on to your work-disk all of this is accomplished without a single disk change. Words can be added to a user dictionary during the correction process.

Superscript is certainly the most comprehensive word processor available for the 64. It is well documented, will read Easyscript files and link with *Superbase,* you can get into it quickly, but very few will plumb its considerable depths. If you need a sophisticated and powerful word processor for the 64, this is the ultimate.

Preformatting

Vizawrite is a *pre-formatting* word processor where you lay the document out on the screen more or less as you expect to see it printed out. If you are already a typist, this is a very natural way of working; as a writer I fnd this unimportant — I prefer to get the words down out of my head quickly, and worry about the formatting afterwards.

Vizawrite allows you to type in a document wider than the screen by automatically scrolling backwards and forwards as you type — it means that you can only see half the width of a 80 column document at a time on the screen. A single command converts the document to the screen width allowing all of the text to be reviewed and edited with ease. The simplicity of switching between screen width and document width makes Vizawrite work convincingly as a *WYSINWYG* (what you see is *nearly* what you get!) word processor on the 40 column screen. Until I used Vizawrite I was firmly convinced that post-formatting was the only way to work with the restricted screen width on the 64.

Getting started with Vizawrite is easy due to the excellent manual and the simply learned controls. The main control used is the *CBM* key and this is used in conjunction with a easily remembered letter to carry out a particular operation. Thus you use *CBM* to change the screen width. In addition some functions are called by using the *CNTRL* key; with the most common functions, such as insert and delete, having function key alternatives.

The insert, delete and move functions are a delight to use, just like a *Wang* dedicated word processor. The function keys are used for *paging* through the document; Vizawrite works by dividing the document up into separate pages — this is another feature which typists will love and writers will not. All the features you would expect from a good quality word processor are included including support for virtually any printer. The 30,000 word spelling checker, which loads separately from disk, allows new words to be "learned" and added to the user directory during document checking. It loads and works very fast. Vizawrite will read in documents from other word processors including Easyscript, and links with *Vizastar* to provide an unbeatable integrated business system on the 64.

For any other home machine, you would be pleased to find a single product as good as either of these, 64 owners are lucky to be spoilt for choice. These are both excellent products. If you were starting from scratch, I would probably recommend Vizawrite for most applications, it has most features you could ask for and is particularly pleasant to use. Superscript offers more features and if you are already an Easyscript user, Precision's upgrade offer is very attractive. Both Precision and Viza have C128 versions with 80 column capability in the pipeline, and Vizawrite on the 128 is based on the excellent upgraded PC version.

Viza Software: 9 Mansion Row, Brompton, Gillingham, 0634-813780
Precision Software: 6 Park Terrace, Worcester Park, Surrey, 01-330 7166

Office in your pocket

Database's Mini Office is the cheapest way yet into wordprocessing, databases, spreadsheets and business graphics

If THERE ARE any awards for utility software, this package would be a deserving winner. Database's 64 **Mini Office** is a miracle of economy both in size and cost, since it squeezes a word processor, spreadsheet, database and business graphics program onto one tape, and yet costs only £5.95.

Intended only as a gentle introduction to "business" software, Mini Office has emerged as something altogether more impressive. It may sound unlikely, but I think that despite the disadvantages of being on tape — although I'm sure there will be a disk version if demand is high enough — Mini Office has something to offer EVERY 64 user. Whether you want to write letters, keep details of collections or other data files, prepare graphs and charts or make complex accounting tasks easier, Mini Office can help you out.

Let's look at the facilities offered by each of the four programs.

Corrections

The word processor allows you to select normal or double-size printout on the MPS-801 or 802 before you even start typing — and few expensive WP packages allow that. You can if you wish write in double-size text and print out in normal size — a valuable aid for the partially sighted.

A display at the top of the screen tells you the time elapsed since you started typing (and at a press of a key you can bring up a typing speed readout), the number of words written so far, and the memory space remaining. Corrections to typed text are made using the cursors and DEL key, and you can set the margins, line length and tab positions as you desire. Sections of text can be moved using the cursor keys, and files can be saved to tape or disk. Border, background and ink colours can be changed.

The word processor is designed to work with a page length of 11 inches, so if your printer doesn't conform to this standard it will print on the perforations unless it has automatic skip-over. Aside from that, the program is easy to use and has no major drawbacks. Its best feature is that it uses no complicated control codes, so it's easy to pick up.

The database allows you to set the number of "fields" in your records, define their names, specify whether numeric or

string, and so on. Once your records are entered you can store them, retrieve them and sort them according to a wide number of requirements; for a specific string, or for specified numeric values, or numbers greater than, less than, or between two limits. You can perform a multi-field "sort", put the records in alphabetical order, and replace specific fields at will.

The spreadsheet program allows you to create a "sheet" of a specified number of rows and columns, insert column headings, and define formulae by which the numeric data you insert in the boxes can be combined. For instance, you could work out your monthly household expenses, multiply by twelve to get a yearly sum, add mortgage payments, subtract income and get a total of money remaining at the end of the year. Many facilities for copying and altering sections are included, and the whole thing can be printed out or saved as a file.

Graphics

This file can then be used as input for the graphics program, which will allow you to specify the rows of the spreadsheet information you wish to include, and display three kinds of chart; line, bar or pie. With a suitable printer you can then produce hard copies.

Although no-one would pretend that Mini Office is powerful enough to cope with large-scale business applications, for most owners it will probably be a godsend. At the price, it can be justified as a "training aid" for inexperienced users who wish to go onto something more expensive and sophisticated — but I expect many people regarding Mini Office in this way will end up ditching plans to splash out sixty or seventy pounds on one sophisticated package, and will stick with this little marvel much longer than they planned. ■

Product: Mini Office
Micro: CBM 64
Supplier: Database Software, Europa House, 68 Chester Road, Hazel Grove, Stockport, SK7 5NY, 061-480 0171.
Price: £5.95

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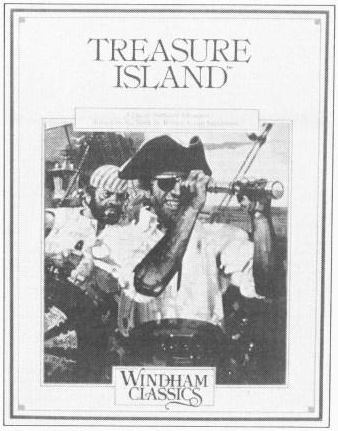

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Spectrum

THIS 64 utility comes from S Shipton of Barnsley, Yorkshire

THIS PROGRAM simulates the INK, PAPER, BORDER commands of the Sinclair Spectrum. The first listing can be typed in as Basic, and will load as machine code. The second listing was written in assembler using the Champ package.

The machine code locates itself at 49152, but it should be possible to relocate it.

To use the program, type as part of your routine

SYS(49152),BORDER,PAPER,INK, where each parameter is replaced by a colour code 0-15. You should then see the colour changes on the screen.

```
10 DATA32,241,183,134,87,32,241,183,134
20 DATA88,32,241,183,134,89,224,16,176
30 DATA22,32,44,192,165,87,201,16,176
40 DATA13,32,50,192,165,88,201,16,176
50 DATA4,32,56,192,96,76,72,178,165
60 DATA89,141,134,2,96,165,87,141,32
70 DATA208,96,165,88,141,33,208,96
100 FORA=49152TO49213
110 READB:POKEA,B
120 NEXT
```

```
480A            ;S.SHIPTON
480A            ;1 JANUARY 1985
480A            :
480A            ;COLOUR,BORDER,PAPER,INK
C000                    ORG  $C000
C000 20F1B7             JSR  $B7F1
C003 8657               STX  $57
C005 20F1B7             JSR  $B7F1
C008 8658               STX  $58
C00A 20F1B7             JSR  $B7F1
C00D 8659               STX  $59
C00F E010               CPX  #$10
C011 B016               BCS  ERROR
C013 202CC0             JSR  INK
C016 A557               LDA  $57
C018 C910               CMP  #$10
C01A B00D               BCS  ERROR
C01C 2032C0             JSR  BORDER
C01F A558               LDA  $58
C021 C910               CMP  #$10
C023 B004               BCS  ERROR
C025 2038C0             JSR  PAPER
C028 60                 RTS
C029 4C48B2     ERROR   JMP  $B248
C02C A559       INK     LDA  $59
C02E 8D8602             STA  $0286
C031 60                 RTS
C032 A557       BORDER  LDA  $57
C034 8D20D0             STA  $D020
C037 60                 RTS
C038 A558       PAPER   LDA  $58
C03A 8D21D0             STA  $D021
C03D 60                 RTS

SYMBOL TABLE :-

ERROR   C029    INK     C02C    BORDER  C032

PAPER   C038
```

Patterns

THIS C16 routine comes from David Hiscoke of London

PATTERN MAKER is a hi-res graphics utility. It uses two of the C16's graphics commands, BOX and CIRCLE. On running, enter 1 for CIRCLE or 2 for BOX. Left to right position of the shape is from 1 to 300. Width is from 1 to 300. Height is from 1 to 200, Angle from 0 to 360. Movement is from 1 to 10, and time period from 1 to 5000. On completion, press any key to restart.

As a good example, select options 2,10,10,200,5,0,7,50, to generate a fast-moving display of moving boxes which fills the screen with geometrical patterns.

```
10 REM      ** PATTERN MAKER **
20 REM  BY   DAVID  HISCOKE    1985
30 VOL8
40 SOUND 1,600,10
50 SCNCLR
60 COLOR 0,1:COLOR 1,6:GRAPHIC0
70 PRINT"■■                PATTERN MAKER"
80 PRINT"■■■ CIRCLE=1 OR BOX=2 ?"
90 INPUT Z:IFZ<10RZ>2THEN90
```

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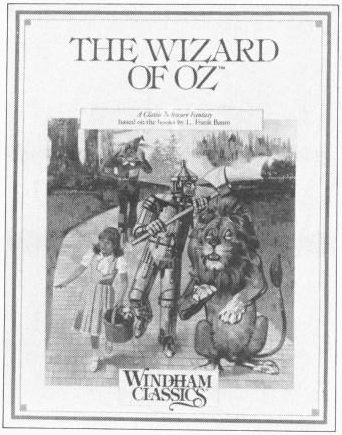

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```
100 PRINT"■"
110 PRINT"■ LEFT TO RIGHT POSITION 1-300 ?"
120 INPUT LR:IF LR<1 OR LR>300THEN120
130 PRINT" UP & DOWN POSITION 1-200 ?"
140 INPUT UD:IF UD<1 OR UD>200 THEN140
150 PRINT"■ SHAPES WIDTH 1-300 ?"
160 INPUT SW:IF SW<1 OR SW>300THEN160
170 PRINT"■ SHAPES HEIGHT 1-200 ?"
180 INPUT SH:IF SH<1 OR SH>200THEN180
190 PRINT" SHAPES ANGLE 0-360 ?"
200 INPUT SA:IF SA>360THEN200
210 PRINT"■ SHAPE MOVEMENT 0-10 ?"
220 INPUT SM:IF SM>10THEN220
230 PRINT"■■■■■■ TIME PERIOD 0-5000 ?"
240 INPUT TP:IF TP>5000 THEN230
250 GRAPHIC 1,1:COLOR 4,1
260 SOUND 1,800,10
270 ONZGOTO280,330
280 FOR A=0 TO TP
290 CIRCLE 1,LR,UD,SW,SH,SA
300 SW=SW+2:SH=SH+2
310 NEXT A
320 GETKEYA$:IFA$<>""THEN40
330 FOR A=0 TO TP
340 BOX 1,LR,UD,SW,SH,SA
350 SA=SA+SM
360 LR=LR+SM:UD=UD+SM
370 NEXT A
380 GETKEY A$:IFA$<>""THEN40
```

Loader

I WOODLEY of Potter's Bar sends this utility for the 64

THIS MACHINE code routine will NEW the program it is part of, then load and run a new one. This is useful when you have to split a program due to lack of memory space. You can use it as part of a security routine, to load the part of a program requiring a password, then load the main routine only when the password is supplied.

LOADER can be added to your Basic program either at the beginning or the end, but you should only use SYS 49152 when you want to load the next part. The program uses the keyboard buffer (631-640) to NEW the old program and LOAD/RUN the new.

```
1 REM BEWARE! THIS PROGRAM NEWS ITSELF
2 REM SO SAVE IT BEFORE RUNNING
5 REM BY I.WOODLEY
10 FORT=49152TO49240:READA:S=S+A:POKET,A:NEXT
11 IFS<>11059THENPRINT"VALUE OF DATA ERROR"S:END
20 DATA32,68,229,169,78,32,210,255,169,69,32,210,255
30 DATA169,87,32,210,255,169,17,32,210,255,169,17,32,210,255
40 DATA169,76,32,210,255,169,79,32,210,255,169,65,32,210,255
50 DATA169,68,32,210,255,169,19,32,210,255
60 DATA169,13,141,119,2,169,13,141,120,2,169,82,141,121,2,169,85,141,122,2
70 DATA169,78,141,123,2,169,13,141,124,2,169,6,141,198,0,96
80 SYS49152:REM USE TO LOAD NEXT PROGRAM
```

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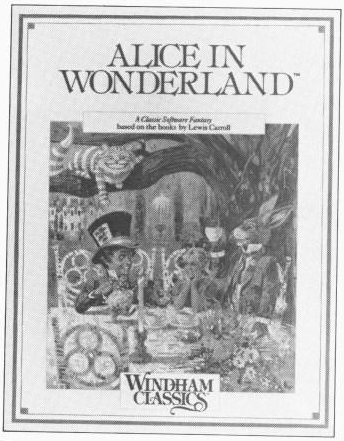

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Serious moonlight

Book: *Moonlighting with your personal computer*
Author: *Robert J. Waxman*
Publisher: *Blandford Press*
Price: *£4.95*
Reviewer: *Trevor Doherty*

The blurb on the jacket, which illustrates a full 64 set-up with disk drive and printer, says "An insider's advice on how you can earn extra cash". Well, I moonlight with my 64, and would say this book is a good guide to the opportunities available. The book isn't machine specific, but the 64 gets a mention as one of the cheapest machines suitable for serious work.

A range of money-earners are covered, from writing software to consulting, and I found the introduction on the ethics of moonlighting refreshingly candid. Some of the facts quoted seem a bit dubious (or maybe just out of date).

I wouldn't rely on this book alone to step into a lucrative part-time career, but it does provide a useful introduction.

As Terry Wogan would say "Don't give up your day job!"

C16 makes its play

Book: *Commodore 16 Games Book*
Authors: *Cameron Duffy and Richard Woolcock*
Publisher: *Melbourne House*
Price: *£5.95*
Reviewer: *Permjot Singh*

Credit must be given where it's due; there really doesn't seem to be much to criticise about this book.

Coming soon after the launch of the C16, when there's a great demand for games and little software on the market, this book caters for a wide variety of tastes. The program listings vary considerably; there are adventures, shoot-'em-ups, strategies and logic exercises. If you hate typing in listings, you'll be glad to hear that some of the routines are just forty lines long. Even better, Melbourne House has made many of the listings, all of which are in Basic, available on a Games Pack cassette sold separately.

The other perennial problem with games listings is bugs. Melbourne House has included a checking routine in the book which should ensure that there aren't any problems of these kinds.

There are also other bonuses; a sprite routine, a joystick control utility and a merge program which will allow you to join two programs together. These will help you to develop your own programs.

Although some of the program explanations are a little brief, and it may take some time for beginners to figure out what they have to do, overall the book is very good, and I would recommend it to any C16 games enthusiast. Well done Melbourne House — simply speaking, if this book won't impress you, then what will?

Depressed market

Book: *Business Programming on your Commodore*
Author: *Peter Jackson*
Publisher: *Phoenix Publishing Associates*
Price: *£7.95*
Reviewer: *Trevor Doherty*

This book is aimed at sales and marketing managers who want to use their home computer for their daily work, without spending a fortune on software. Starting from the rudiments of Basic, the wide-eyed computer innocent is led through such delights as "graph plotter" and "forecaster", to the dizzy heights of "Sales Trend — The Sales Manager's Package".

The book doesn't actually appear to have been written for Commodore hardware but hastily converted from some other machine — "with Mode 4 graphics, the 22k normally available for BASIC . . .!"

My advice to Sales and Marketing Managers — save your money, time and effort and go out and buy some carefully chosen software packages.

Jack attack

Book: *The Home Computer Wars*
Author: *Michael Tomczyk*
Publisher: *Holt Saunders/ Compute*
Price: *£7.95*
Reviewer: *Christina Erskine*

This claims to be "an insider's account of Commodore and Jack Tramiel", and maybe it is. For any home micro enthusiast this is fascinating — a chance to glimpse something of the workings and personalities of Commodore in the days of Jack Tramiel and the Vic 20.

I found the chapters on the conception and birth of the Vic riveting — everything after that was an anticlimax, and I wouldn't be surprised if Tomaczyk felt that too.

On Tramiel, I found the book less satisfying. Everyone knows the story of how he built Commodore up from a typewriter parts company into a giant corporation, and everyone knows what happens in the end (they all resign or get fired). So instead of Tramiel's move from Commodore to Atari coming as a bolt from

the blue, I spent much of the last third of the book looking for reasons for the move.

Tomczyk, for four years Tramiel's assistant, writes in a ghastly neo-American sub-journalese, and doesn't manage to come over as a likeable character. He pounds the "business is war" metaphor at every opportunity, and overall it's not the kind of book which would have much to offer to the general reader, only to those who are determined to find out more about "the titanic struggle" inside Commodore and between the company and arch-rivals like Texas Instruments and Atari.

Pay as you learn

Book: *The Commodore 64 Payroll Book*
Author: *Roger Valentine*
Publisher: *V&H*
Price: *£19.95 (+disk or cass. £5.75)*
Reviewer: *Trevor Doherty*

If you want to run the payroll for your business on a Commodore 64, then this book is for you.

What the book contains is program listings for a payroll system, details of how it works and a user manual which allows you to put the programs into operation. Details of how to modify the programs, for example, to use for monthly pay rather than weekly are included.

Whilst the program listings are clear and easy to follow, I would recommend purchasing the disk or cassette, rather than typing in over 1000 lines of Basic. The disk and book together at about £25 are quite a bargain for a complete payroll system.

Practical filing

Book: *Filing Systems and Databases for the Commodore 64*
Author: *A.P. & D.J. Stephenson*
Publisher: *Collins*
Price: *£7.95*
Reviewer: *Trevor Doherty*

For anybody who wants to write a filing system in Basic, this is a book to guide you in the right direction.

Generally, I'm not in favour of books of program listings, but this one is not just that, more a helpful mixture of theory and sub-routines which you can use to produce a working system. Some machine code routines are included to speed up sorting.

Well worth reading to learn the principles of computer databases, as well as the practical programing aspects.

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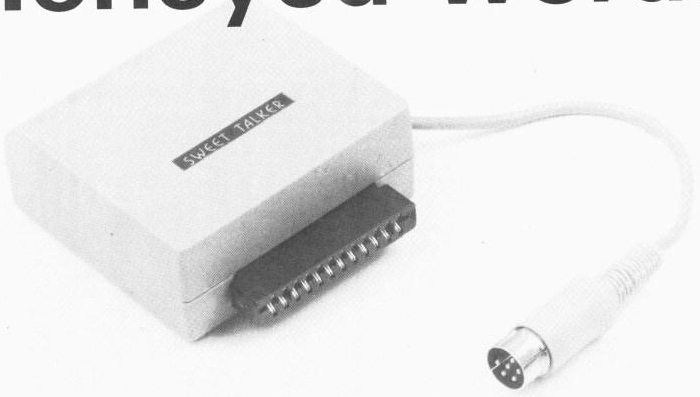

Cheetah's speech synthesiser is a no-frills unit at a budget price. ***Nathan Grosstwicker*** *assesses its chances and finds that the Sweet Talker has plenty to say for itself*

AFTER OUR round-up of speech sythesisers in the April issue, most of you should be pretty clear on what these digital voice boxes can do and how they work. The Cheetah Sweet Talker doesn't hold any surprises in those field, but it is surprisingly cheap.

Cheetah's latest contribution to the 64 hardware market comes in the same case as the RAT infra-red joystick interface. It's a cartridge shape which plugs into the back of the 64, with a lead going into the audio-visual port so that the speech output comes out of your TV or monitor speaker.

The Sweet Talker's speech sounds very much like that of other similar systems — not very realistic, since there's no inflexion possible. However, the gargling sounds most speech synths make have a charm all of their own, so there are no complaints on that score.

Like most other systems, the Sweet Talker operates on a system of allophones. A sound generated by the SID chip is put through a filter, and the filter modulated to produce any of the sixty or so basic parts of English speech. These allophones can be combined through your programs into any word you choose — certainly a preferable method to having a fixed vocabulary, though intelligibility suffers.

Unfortunately the Sweet Talker isn't very user-friendly. For a start, the driving software isn't in ROM — you have to type it in, or load it from the cassette provided. Secondly, the Sweet Talker doesn't have any form of interpretation routine; you can't just type in English words, or even letters, you have to type in strings of numbers.

The manual gives the codes for each allophone and explains how to write Basic programs; for instance, to get the Sweet Talker to say "Cheetah" you would use 10 DATA 50,19,13,15,15,0,−1. These are the codes for the allophones CH, IY, TT, A, A, pause, end. It's a real pain to have to look up the code for each allophone, and certainly emphasises the user-friendliness of rival systems like the DK'Tronics/Currah Speech 64, which has a language interpreter in ROM and can make a stab at any word you care to type in.

The Sweet Talker comes with a demo on the B-side of the tape, which gives some ideas as to how the unit's speech can be incorporated into your own Basic programs. However, there's no mention of using machine code.

The Sweet Talker doesn't appear to have any more facilities than the absolute basics — there aren't any plans for commercial software exploiting the device, so you may find it a bit of a dead end in that respect. However, if you just want to find out what speech synths are all about, and don't demand all the frills, the Sweet Talker may have something to say for itself. ■

Product: Cheetah Sweet Talker
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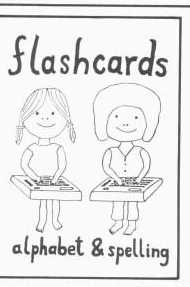

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At that stage there was no intention that it should be an ambitious package. Just a simple program that could be sold at a very low price.

We called in experts in business software programming, told them what we wanted and sat back to await results.

What happened next was totally unexpected. For they all came back with ideas that were to considerably expand our original brief.

In the end what had been planned as little more than a beginners' guide to word processing, database management, spreadsheets and graphics had been turned into a full scale suite of programs covering all four applications.

In fact the only part of the brief that remained was our original insistence that the package should be quick to learn and easy to use.

And despite all the extra sophistication that has been written into it, we decided that, as a service to our readers, the price should still be kept at the very low figure originally fixed.

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Using the **Word Processor** is simplicity itself. There are none of the cryptic coded instructions that had to be mastered by people learning the early word processors.

You start by selecting the size of type you prefer – either normal or double-size. The latter is a feature that you cannot find on any other word processor.

It is particularly suitable for the partially sighted – in many cases giving them their very first opportunity to use a word processor.

This means they can use a micro to compose a letter, using the double-size mode, and then print it out using normal size type. For many people this could be the first time they can send out a perfectly typed letter without outside help.

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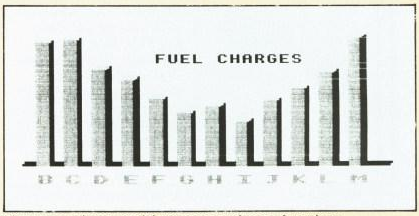
At any time you can press a key which tells you your typing speed. This is a most useful function, and can play an important part in increasing your efficiency at the keyboard.

You can also decide the size of the margin, the line length and the tab positions. Text can be moved from one part of the document to another.

At any time you can preview the text to see how it would look when printed out.

As with all the other programs in Mini Office, your work can easily be saved and loaded when you want to use it again. It can also be printed out.

The **Database** program can be used to store a mass of information. It can be retrieved, in its entirety or just the parts you require for a particular purpose, whenever you need it.



Figures on the spreadsheet can produce a bar chart . . .

The operation is so simple that a useful database can be created in minutes rather than days – and you certainly don't need any computer experience to set it up.

The powerful search facility is very easy to use. You can search for a particular word or words or you can order a numeric search – such as telling the computer to find all the numbers greater or less than the one you provide.

You can carry out multiple sorts. For instance, if you have built up a mailing list containing a list of names, addresses, telephone numbers, occupations and ages you can ask the database to provide you with a list of teachers living in Liverpool whose ages range from 25 to 30.

One powerful option allows you to replace anything on the database without having to go through the whole lot making amendments yourself. You could, for instance, instruct it

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to find each reference to "teacher" and replace it with "lecturer".

The **Spreadsheet** is our version of the program that marked a milestone in business computing – Visicalc.

It is often pointed out that this one program alone has helped to sell more personal computers than any other.

Certainly Visicalc and its derivitives have never been shaken from their position at the top of the list of best-selling business programs.

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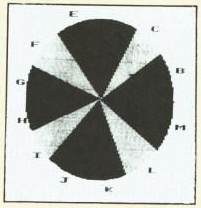
The Mini Office version is ideal for home finance, providing you with an effortless means of keeping tabs on your income and expenditure – and enabling you to work out your own budget.

In our Spreadsheet program – as well as in the Database – we have provided



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a sample file so that you can experiment with it before entering your own data.

One feature we have included which to our knowledge does not exist in any other spreadsheet is a warning device to prevent you accidentally erasing formula – a very useful precaution.

The **Graphics** program uses the standard business graphics – line, bar and pie charts – in full colour. Which is something not always available on far more expensive graphics packages.

The program uses data you have already prepared on the spreadsheet. You have to identify which set of information you require to see in graph form – such as by indicating which row or column – and then which of the graphs you require.

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Because our original intention was to produce a package for people new to all these applications, we have produced a fully-detailed, easy to understand manual.

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● *Graphics illustrated here are from the Amstrad version and are slightly different on the Commodore version.*

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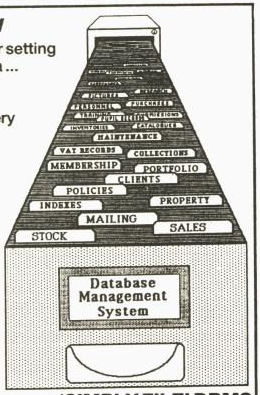

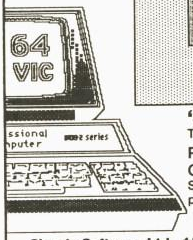

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WANTED: Elite, Moon Cresta, Gremlins, Dark Tower, Shadowfire, Cauldron, Ancipital, 911 TS, D.T., Super Test, Urban Upstart, Hello to Zow and Heath, games for the CBM 64. Paul Flanagan, No. 6 Corry, Belleek, Co. Fermanagh, N. Ireland, or phone 036565 594.

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Basic pointers

I HAVE COME up against a problem using high resolution screens on the 64. The hi-res screen memory is 611 up from the bottom of Basic, and my data for the hi-res screen runs into it, without even thinking of the rest of the program. Could you explain how to move the hi-res memory, or how to move the Basic pointer above it?
T J Calver
Basingstoke
Hants
MOVE THE start of Basic to $4000 (16384) using POKE 43,1: POKE 44,64: POKE 16384,0:NEW and move the end of Basic to $A000 (40960) by POKE 55,0: POKE 56,160: CLR. This will give you 24K available for Basic, the most possible unless your hi-res data is not put into RAM.

Hex into decimal

PLEASE COULD you tell me if the various listings in your magazine and others which contain hex in data statements, with a Basic loader, can be entered direct with a machine code monitor such as Zoom or Supermon?
J Lee
BFPO 16
YES, YOU CAN enter these hex values using a machine language monitor, then store the program on disk or cassette. The values in the data statements are normally the decimal equivalents of the hex values though, so you will have to convert them first unless a hex equivalent is given.

Character sets

I HAVE the same problem with both the Vic 20 and the CBM 64. Could you tell me if there is a formula for working out how to point the screen RAM at the redefined character set? I also have a 16K RAM pack for the Vic, and though I have the *Programmers' Reference Guide* for both machines none of the POKEs given seem to work.
DCJ Tilley
London

TO SET THE character definition pointer where X = 0 to 7, you should use POKE 53272, (PEEK(53272)AND240)OR 2*X for the Vic 20. A 16K Vic program puts the character set at $7168, and the screen is at $7680. Run this program in upper case mode;
10 FOR I = 0 TO 511: POKE 7168 + I, PEEK (32768 + I): NEXT
20 POKE 36869,255: POKE 648,30: POKE 36866,150: POKE 56,(7168/256): CLR
This copies 64 characters from the ROM character set to $7168 onwards. Now try in direct mode (just type — don't worry about the missing cursor!)
FOR I = 0 TO 7: POKE 7168 + I,I: NEXT
All the A's will have changed into rubbish, and if you press an A the same thing will be displayed. This is just to show that the routine works.!

No dice with disk

I OWN A Commodore 64 and have recently been given a Southwest Technical Products Corp DMF2 8" Dual disk drive. Are you able to give me any advice on a suitable interface, and is there a distributor in this country who I can contact for general advice?
F Nicholls
Dereham
Norfolk
I DOUBT that you will be able to use such a drive with the 64, and you will certainly not be able to use commercial software. CBM drives are "intelligent", that is to say they have ROM or RAM on microprocessors built-in, which means that the computer can often proceed with a program while the disk does its own processing. The 64 initiates commands which are recognised by the disk drive. To use your drive you would need some kind of "intelligent" interface, to simulate the 1541/64 DOS responses — and there's no such product on the market.

Graphics gripe

I AM WORKING on an adventure program on the 64, and I have a Koala Pad with which I have designed a few pictures for the game. Each picture takes up so much memory that there isn't enough room. However, games like *Macbeth* obviously have a better way of storing such pictures. Can you suggest any books which will help me with such graphical problems?
K G Taylor
Brecon
Powys
I CAN recommend three books to help you. The first is *Graphic Art on the 64*, by Boris Allen, published by Sunshine at £5.95. The second is *Programming the 64* by Raeto West, costing £14.90. Sunshine also publishes *Commodore 64 Adventures* by Mike Grace, also at £5.95, which is a guide to writing and playing adventure programs.
One answer to your problem of memory for screens is to use fast loading from disk, during the program, since you can store many screens on a single disk.

Double height

I HAVE HAD a 64 for some time and have recently started programming. Can you tell me how to get double height letters in Basic, and recommend a good book for learning further programming?
A Taylor
Wigan
Lancs
THERE ARE three ways of programming double height characters. First, you can create your own user-defined character set. Secondly, you can use sprites for your characters which can be expanded in the vertical plane using POKE 53271,1. Thirdly, you can copy the character set information from the ROM, but use the data repeated four times (or more for larger characters).
You should buy the *Commodore 64 Programmers' Reference Guide*, published by Commodore themselves, which should explain the methods necessary and give you pointers on many other programming subjects. There are also dozens of books available with titles like "Starting Basic Programming on the Commodore 64", most of which cover the same ground. Pick one written in a style which suits you, and work through it in conjunction with the Reference Guide.

White noise

CAN YOU advise me how to get the noise waveform on voice one of the 64's SID chip? I haven't been able to get anything except what sounds like a lower form of the triangle waveform. Could there be something wrong with my sound chip? Also, is there a printer for the 64 at less than £100?
G Millward
Monks Risborough
Bucks
TO ACTIVATE noise for voice 1 you should POKE 54276,128. There are some misprints in the PRG which may lead to confusion on this point.
The only 64-compatible printer under £100 is the Alphacom 32, which prints on heat-sensitive paper, although you should be able to find a 1520 printer/plotter around £80 if that would satisfy your requirements.

COMMODORE 64

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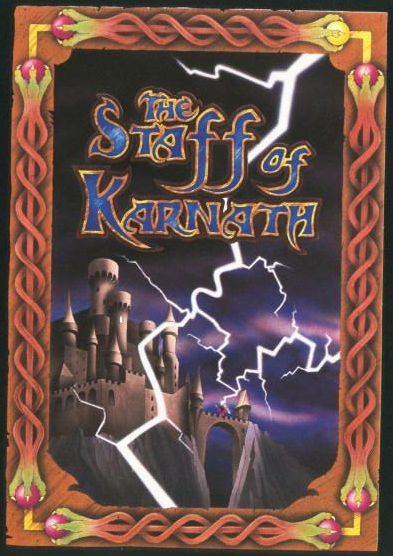

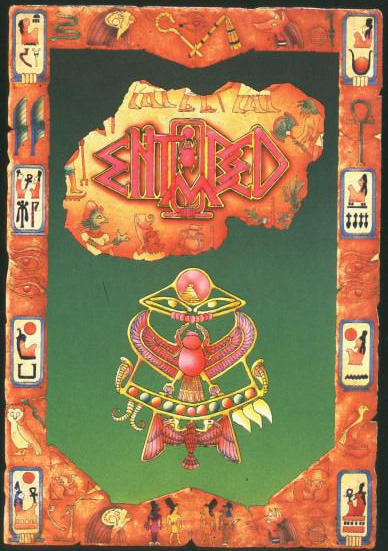

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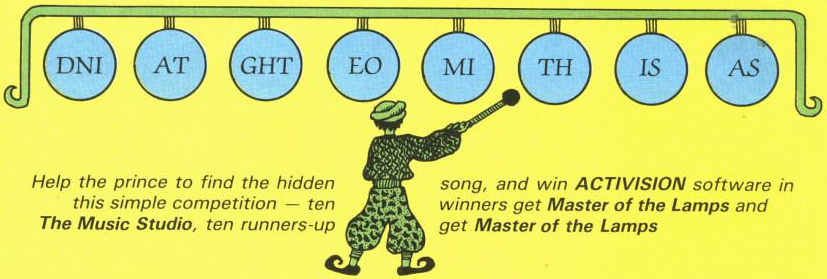

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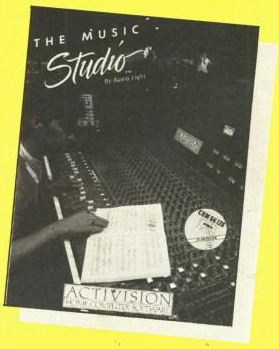

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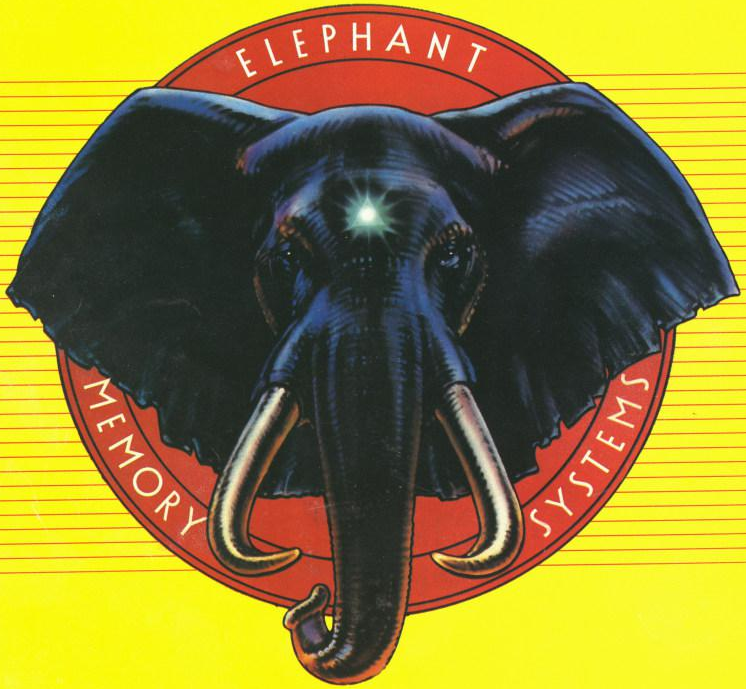

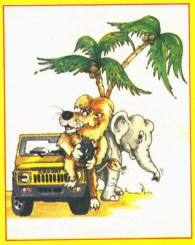

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